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IMPORTANCE OF LABORATORY EFFORT IN CANCER RESEARCH*

BY

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I have spent much of my life in laboratories, and it has been one of my main interests to try and follow the effect of that great increase in the number of laboratory workers which has occurred in my time, not only in this country's contribution to scientific knowledge as a whole but to medical progress in particular. My memory goes back, doubtless like those of some others in my audience, to years when accommodation and opportunities for experimental research were sadly to seek in this country. It was then the almost universal custom among young men who hoped to devote some at least of their energy to scientific research to spend an apprentice year or two abroad; usually in a German laboratory, where inspiration and adequate equipment might in those days be most easily found. For this expatriation there is happily no need to-day, but it must not be supposed that the provision of much more laboratory accommodation would fail to benefit both science and the country.

Justification by Results

It is my own faith, which has grown stronger with the years, that each increase in the accommodation provided for skilled laboratory effort has never failed—and cannot fail—to be justified by its results. In growing science the Law of Diminished Returns finds no application. Our knowledge of Nature has grown great, but the extent of our ignorance is much greater.

A laboratory, of course, is first and foremost a home for the application of refined experimental methods to the study of natural phenomena, and the whole history of modern science has made it certain that such methods attain most surely and most rapidly to that kind of knowledge which gives Man control of Nature; knowledge which, rightly used, enables him to encourage Nature when she seems friendly to his interests and, often, to circumvent her when she seems inclined to be cruel.

This fine and admirably equipped laboratory has been provided by a continuance of the wise and generous policy which led to the foundation of the Imperial Fund thirty-six years ago. In it the Fund's staff is continuing its invaluable experimental studies of cancer, in conditions far more equal to its needs than any it has enjoyed till so recently.

The evils which have resulted from the misapplication of the gifts of science have been much discussed of late, often with implications very unfair to scientific workers. But the work of this laboratory, devoted as it is to the acquisition of knowledge which can only render signal service to humanity, can never suffer such reproaches.

Should any doubt it, it is my hope to convince them of the extreme importance of laboratory activities amid the present strenuous world-wide endeavour to solve the very difficult problems which the existence of cancer presents. I trust, however, you will not think that in my preoccupation with these activities I undervalue progress in knowledge won by other means, or fail in admiration for the increasing wisdom and skill with which existing knowledge is being applied by those whose immediate task is to relieve suffering. On this occasion, however, I will ask you to think particularly of more recondite aspects of the cancer problem. Of these members of the lay public usually know but little, and, frankly, there are many who fail to recognize the importance of their study. Yet it is most unlikely that a complete mastery of cancer will arrive until we reach to fuller knowledge of its intimate nature as a phenomenon of uncontrolled growth.

But knowledge of this kind must be sought deeper down in the nature of things than can be reached by observation alone, or by any superficial method of study. While the cure of cancer must become ultimately a medical problem, to discover its fundamental nature is a biological problem of great complexity. We are at least not likely to reach any solution of this without sustained efforts based on experimental methods. These in particular are the task of the laboratory.

The Method of Observation

I might illustrate the special advantages of the method of experiment in science by innumerable modern instances. I am tempted, however, to ask you to have in mind a far-back chapter in the combined history of science and medicine. It deals with a period when the careers of two investigators overlapped, each supreme in his own sphere, but each with his own method of interrogating Nature.

Up to the middle point of the last century the causes of fevers were unknown, and attempts to distinguish one form of fever from another had but little success. Indeed Sir William Osler once remarked that ignorance of such matters had been till then scarcely less than that of the time of Sydenham. At the historical moment to which I am referring this country was especially fortunate in possessing among its medical leaders men of great intellectual power and attainments. Of these was William Jenner.

* Address given at the official opening of the New Laboratories of the Imperial Cancer Research Fund at Mill Hill on June 27, 1939.

Jenner had for some years been trying to make it clear to his English colleagues that typhus and typhoid fever, then held to be identical, were distinct pathological entities. His views, though of course sound and correct, met with opposition and criticism both at home and abroad. In 1850, a year in which, as I would have you note, Pasteur was already becoming known as an experimentalist, Jenner published his book on fevers. I will quote from his preface to that book. After admitting that his earlier efforts to the above end had not brought conviction to others he continues:

"I considered therefore that it was necessary to begin *de novo* and consult only the voice of Nature—convinced that although the most intellectual might fail at first to comprehend her often ambiguous language, yet that her most humble votaries might by patience and daily watching, by keeping honest record of every sound she uttered—by joining letter to letter, adding word to word, and line to line—at last spell out her meaning and so reach that rank which the great master of induction tells us Man may legitimately hope to attain—namely, that of her interpreter."

Here in fine terms we have an epitome of what the method of the observer should be. Jenner had spent an immense amount of labour on the problem during the two years which preceded the publication of the book. He had compared side by side every characteristic of the two diseases which could be observed and recorded, and this in a great number of cases. In sum, the evidence as one reads it to-day seems not far from being conclusive. But each individual item contained in the evidence lacked constancy; each contributory argument could be criticized, and was criticized, by many. Complete conviction did not come. Meanwhile, Pasteur the experimentalist was at work.

The Method of Experiment

Jenner felt the ambiguity of Nature's chance remarks, but saw apparently no remedy save in the laborious recording of her spontaneous utterings and a painful effort at interpretation. Nature, however, can be taken into the witness-box and directly questioned, and the questions can be so put that there is no possibility of ambiguity in the answers. This is the method of experiment. It was the method of Pasteur. Only a few years had to elapse before his brilliant and carefully controlled experiments had established, once for all, the microbic origin of infective diseases. To a new era in the history of fevers belonged that moment when Pasteur, intruding into a vague discussion concerning the "cause" of puerperal fever, rushed to the blackboard, made a rapid sketch of a microbe, and cried, "Tenez, tenez! Voici sa figure." It is a great thing to see the face of the enemy. It is true that some years had to elapse before the exact nature of the specific agents responsible respectively for typhoid and typhus fever could be described. This, however, was merely a question of developing technique. Such evidence was bound to come after Pasteur had once started the right lines for thought and method.

You will realize that the most significant thing about Pasteur's experimental results was that they revealed wholly unsuspected relations in Nature, based on knowledge which was then entirely new. Jenner had many predecessors. Generation after generation of physicians had been in contact with infective diseases, and we know that during the long history of medicine men of exceptional intellectual power had eagerly studied every symptom displayed by suffering patients. Yet no clear hint regarding the fundamental nature of infection was revealed to their minds.

Real progress, and even important generalizations, may doubtless result from the recording of systematic observations on aspects of phenomena directly revealed to the senses and in the established conditions of ordinary experience. This is true, for instance (especially in biology), of studies dealing with changes and variations in visible form, macroscopic or microscopical. In the history of cancer research morphological studies played a prominent part. They yielded indispensable information, but could throw little light on the underlying phenomenon of morbid growth. It is characteristic of the experimental approach to phenomena that it often yields knowledge of a kind quite unforeseen. It can reveal to alert minds the existence of paths for progress which lead to unknown aspects of Nature, and thus to new vistas for the intellect. Such aspects are of course part of reality, and only remain unknown because in our customary contacts with Nature the conditions which reveal them to our senses are not established. The experimentalist chooses his own conditions. The history of modern science is crowded with examples of these special attributes of the experimental method.

It is possible that some here, acquainted with the nature of scientific progress, may feel that I have been insisting overmuch on so obvious a matter as the importance of experiment, but I continue to meet many intelligent people who have failed to realize it. They are at any rate inclined to say, "We know that the experimental method has created subjects like modern chemistry and physics, but do not the problems of cancer belong to a category quite different from that which included subjects such as these?" We are sure to-day, however, that, like so many other biological problems, those of cancer are closely interwoven with those of the fundamental sciences.

One used some years ago to hear it said pessimistically that we shall never fully understand the manifestations of cancer until we have solved the riddle of life itself, with the implication that this will always remain unsolved. Such a view needs much qualification. At one level at least of their organization living tissues are essentially physical and chemical systems, and it is at this level we must expect to find a basis for the differences displayed by cancer cells and normal cells. If the material basis of life has esoteric qualities which are neither physical nor chemical, these will not intrude into this particular arena. Current research is showing that we are by no means powerless to reach significant knowledge of the events which progress in living cells, and one line of endeavour to-day is to compare these events in normal and cancer cells respectively.

Cancer: Dogmas and Facts

As its present director of research pointed out in a recent annual report, the Imperial Cancer Research Fund was founded at a time when extreme confusion and pessimism prevailed in the medical profession on the subject of cancer. It was held, for instance, by most to be a constitutional disease due to obscure qualities in the make-up of individuals which involved a liability to the disease from which there could be no escape. Yet not a few believed it to be an infective and even a contagious disease inherent in civilization itself. The highly civilized communities, owing to luxury and artificial habits in matters of food, drink, and the like, were supposed to have acquired a liability not suffered by primitive races or by wild animals which live more in accord with the demands of Nature. These and other dogmas current a generation ago, while inconsistent among themselves,

were all of a kind to make the situation seem hopeless in respect of both the prevention and the cure of the malady. The belief, moreover, that animals do not suffer from it was for would-be students of cancer most discouraging, because in the case of maladies suffered by both man and animals so much had been learnt for the benefit of the former by studies carried out on the latter.

The earlier years of this century saw the beginning of devoted efforts which have now replaced inhibitory dogmas by illuminating facts, and the outlook has changed and greatly brightened. The belief that cancer occurs only in civilized communities was fated to disappear entirely so soon as more extended inquiries had proved its frequent occurrence in primitive races. That animals are liable to cancer had, as a matter of fact, been demonstrated before the end of the last century, and further confirmed early in this. The highly significant fact had also been established that if a few cells from a tumour arising spontaneously in an animal were transferred to the body of another of the same species they will there continue to grow and divide, thus producing a tumour in their new host in all respects similar to that from which they were derived. The significance of these facts was at first not generally grasped and the evidence was received with apathy and disbelief. Yet it is fair to say that the modern and really progressive phase of cancer research began with a recognition of their significance, and it is also fair to say that the very earliest work supported by the Imperial Fund greatly helped to initiate this progressive phase.

Transmissibility of Tumours

The foundation of the Fund in 1902 was indeed most timely ; and fortunately its original staff was fully alert to the extreme importance of tumours shown to be transmissible, as illustrating one aspect at least of the essential nature of cancer. Its first director of research, Dr. E. F. Bashford, recognized clearly that so long as the study of its incidence was restricted to its incidence in civilized man progress must at best be very slow, and in fundamentals perhaps impossible. Investigations therefore had to be placed on a broad basis of comparative, statistical, and experimental studies. Such was the aim which guided the activities of the Fund's laboratories during their earlier years. I must confine my comments to the experimental work then carried out, but in parenthesis I may mention that the staff was fully alert to the importance of other methods of inquiry, in particular of statistical studies as illuminating the aetiology of cancer in man. Dr. Bashford contributed much to the proper interpretation of the available statistical data, and the Fund has maintained its interest in this side of research. You will know that it possesses to-day a Statistical Subcommittee composed of very eminent experts.

Statistical data cannot of course throw light on the intimate nature of malignant growth, and the main activities of the Fund's laboratories in those first years were devoted to a very thorough and enlightened study of transmissible cancers. With increasing experience spontaneous tumours of various types were found to be by no means uncommon in animals, and they occurred in a variety of vertebrate species. When a few cells from any one of these growths were transferred to another animal of the same species their growth continued, forming in the new host, as the much more limited earlier experiments had suggested, a tumour identical with that from which the cells originated. It was also established that the implanted cells did not induce malignant growth in the normal cells surrounding them. The tumour was formed from their own progeny alone. These facts illustrate a fundamental aspect of the nature of cancer, and their establishment at once gave a more hopeful outlook for the surgeon's art. Cancer was shown to have local origins, and not to be a constitutional disease. That is why the removal of a growth at a sufficiently early age may completely eradicate the disease.

Properties of Malignant Cells

During the years to which I am referring the conviction grew that malignant cells possess everywhere the same fundamental properties, and this is the foundation on which the experimental investigation of cancer, as it exists to-day, is built. Of the diseases which can be produced experimentally few, if any, simulate the human disease so closely as cancer.

The laboratory of the Fund, directed after Dr. Bashford's death by Dr. J. A. Murray, did more than any other centre at that time to establish these important aspects of knowledge.

I have felt justified in making this brief and inadequate reference to the earlier history of the Imperial Fund's activities because it is well you should remember that its staff were pioneers in this country in the systematic study of cancer by experimental means. Since they began their labours centres for cancer research have greatly increased in numbers, and are to be found in nearly every civilized country. It was twenty years after the foundation of the Fund that the British Empire Cancer Campaign began to administer the large endowment for research which its appeals to a generous public have provided. There is abundant room to-day for the widespread activities of the Campaign and for the independent efforts of the Imperial Fund.

One has but to read the thirty-six annual reports of its successive directors to realize that the staff of the Fund has throughout those years kept in close touch with every significant advance in knowledge. Its work has been guided by such advances and has greatly contributed to them. Our country should take pride in all endeavours which keep it in the forefront of the battle against a scourge of humanity.

The Pathogenic Agent in Filtrates

I feel that I should put before you some indication at least of the trend of research efforts to-day, but must first ask you to note the significance of certain pregnant facts first revealed so far back as 1911. They have exerted much influence both on thought and on current efforts. In that year Dr. Peyton Rous of the Rockefeller Institute in New York described a form of cancer in the domestic fowl which could be propagated not only by grafts of its cells but by cell-free filtrates made from them. A small quantity of such a filtrate from a tumour present in one bird when injected into another produces a growth exactly similar to that from which it originated. Thus was revealed a pathogenic agent then new to the field of cancer research. This discovery has led to a multitude of important studies in which Dr. Gye, the present director of the Fund's laboratory, has played a most important part. It was at first thought by many that the growths yielding these active filtrates were not true cancers, but the supposed distinction has since lost its significance.

Cumulative evidence has brought conviction that the pathogenic agent in such filtrates is a virus. It belongs

therefore to a class of agents now well known as being the effective cause of various diseases in man, animals, and plants. Characteristic of viruses is their ability to multiply in the body of the infected host, but unlike bacteria they do so only as tenants of living cells.

Some Provocative Factors

I may now direct your attention, though for a very short time, to more recent developments in the progress of cancer research. In a brief address references to these must of course be few and technicalities so far as possible avoided. There are, however, certain fundamental aspects of the subject which, if borne in mind, will explain the trend of many current experimental efforts. In a great number of cases at least we have to recognize in the file of cancer causation the initial influence of an external agent which, acting from the environment, may cause normal tissue cells to become cancerous. Such may perhaps be called provocative factors in the field of causation. When one of them has acted for a sufficient time, which fortunately is usually a very long time, tissue cells previously exercising only their proper physiological functions may be led to grow pathologically. The influence of many of these external factors has long been recognized and is probably familiar to you. Long contact with certain chemical substances is one of them, as in the so-called occupational cancers. Workmen liable to continued contact with shale oil products, with tar or soot, and, more rarely, on exposure to arsenic, aniline, and some other substances, are prone to develop cancer. Long-continued mechanical irritation may induce it and also long exposure to certain forms of radiation. We cannot in this connexion forget the sufferings of those who worked with *x* rays and radium before their power to produce cancer was known.

Such causative influences as these are of course exerted most readily on the skin and superficial parts of the body, and their effects are there easy to observe. It is quite possible, however, that provocative factors, doubtless differing in kind from those just mentioned, are concerned in initiating growths elsewhere in the body. We are apt to speak of such effects as being due to prolonged "irritation." Irritation, however, is a word with vague meanings. In any case we have to learn why only in certain circumstances does irritation become a stimulant to growth. To attain a more definite understanding of the phenomena involved we must study, so far as we are able, the nature of internal events in tissue cells which pass from quiescence to active growth. It is necessary, for instance, to discover whether the growth provoked by an external agent is always associated with chemical or physical changes in the internal economy of the cells, and, if so, to learn what is their precise nature. If constitutional changes must exist before growth can begin we should look on their establishment as involving links in a chain of events of which morbid growth is the final outcome.

Certain alternatives arise here for consideration. Do external factors supply only an initial impulse to growth which once started continues without their continued influence? This must be true of such environmental factors as chemical or mechanical irritation and radiation. On the other hand, in the case of a concrete agent such as a virus its continued presence may be necessary as a stimulus for the continuance of growth. At the same time we must realize that when growth begins apparently as the direct result of "irritation" of any kind it may be that the real effect of this is merely to reduce the cells' resistance to the entry of such an agent as a virus. Again we have perhaps to bear in mind the possibility, though not, I think, the probability, that the modifications which lead to growth may in some cases occur spontaneously, as a mutation in the metabolism of normal cells.

Recent Developments in Cancer Research

Considerations of this kind, and doubtless many others, are guiding current researches which at many centres and in very many hands are continually adding new facts to our knowledge of the subject. Knowledge, moreover, to-day is fast increasing, not in extent alone but also in precision and significance.

I may mention a few developments in justification of this claim. While we have so long known that prolonged contact with tar can induce cancerous growths, brilliant experimental work during the last few years has extended this empirical knowledge on remarkable lines. The combined efforts of the pathologist and organic chemist have shown that it is certain specific substances in tar which are alone responsible for the effects. The exact constitution of these substances is known, while others related to them have been artificially synthesized, and their graded capacity for inducing cancer carefully determined. Among them are some which are remarkably active.

The interest inherent in such facts is increased by the circumstance that these cancer-producing substances, though differing from them in details, are yet akin chemically to substances natural to the body—for instance, to the hormones which control certain of the functions of sex. Indeed it has been shown that in experimental animals subjection to prolonged administration of a sex hormone encourages the growth of glandular cancer, especially cancer of the breast. On the other hand, it is of peculiar interest to learn from work done in the laboratory of the Fund that by the simultaneous administration of yet another hormone this result can be prevented.

It is striking enough to realize that the power to influence morbid growth can be a property inherent in definite chemical substances. Such objective facts as these should encourage equally objective and sane thought about a malady which has been so often viewed in the past from a standpoint which was almost that of superstition.

Recent developments in biochemical knowledge and technique have made it possible to compare cancer cells with normal cells in respect both of their chemical composition and their metabolic activities, and a number of notable differences are now being revealed, some of which may prove to be highly illuminating.

How far a virus is to be looked upon as a necessary and universal factor in cancer causation is not yet a settled question, and opinions appear to differ regarding the answer. It is sure, however, that such an agent plays an important part in the general field of morbid growth. Many new facts are supporting this claim. It is noteworthy, for instance, that as causative factors chemical agents and a virus may display interrelationships and a mutual influence. The circumstance that virus activities in general are now being studied intensively at many centres and in many connexions cannot fail to assist the specialized needs of cancer research.

I must not attempt to say more on these technical aspects of the subject. I can only hope that from the little I have said you may have gathered something at least concerning the trend of current researches. As an

onlooker—for in this great field I have been no more—I have reached the conviction that recent years have seen cancer research enter on yet another new phase, one in which experimental studies are going deeper than before into the nature of the phenomena involved and yielding results of unforeseen promise.

I will now before concluding turn once more to the activities of the Imperial Fund, wishing to pay tribute to the wisdom of the policy of its executive and another tribute to the high qualities of the work of its staff to-day. These qualities recall those of its early pioneer days to which I have referred, though displayed on a field so much wider in scope.

Freedom, Leisure, and the Side-paths

I would like to make a few remarks here which I hope will not be thought intrusive. It has often been said, not without justification, that workers in a centre of experimental activity devoted wholly to one limited end are in danger, owing to their special preoccupations, of ignoring too much the advances won in other branches of scientific endeavour. These may often contain suggestions and even inspiration which can contribute greatly to the progress of their special task. Frontal attacks alone are proverbially not always the most successful method of dealing with an entrenched enemy. The case of cancer research is one, I think, in which this is especially true. Many of its problems are to be found in aspects of living nature of so fundamental a kind that inspiration may come unexpectedly from discoveries made in many branches of pure science.

The ideal for a centre of cancer research would seem to be that its workers, though with their ultimate goal always in mind, should have liberty and leisure to pursue paths which, though apparently remote from what seems to be the direct path, may, in the final issue, prove to be short cuts towards that goal. Such freedom is of the highest value in research. If I mistake not, all desirable forms of scientific freedom are to be found and will continue to be found in this laboratory. The Imperial Fund, I think, remains unique among the many endowed centres of cancer research now in this country. The distinguished personnel concerned with the general direction of its policy, its independent finance, its scientific tradition based on nearly forty years of work, the composition of its laboratory staff so widely organized as a working unit—all these distinguish it and guarantee a future of continued and eminent success. Those who have the privilege of knowing its present director and the senior members of the staff have a further reason for being well assured of this.

Grounds for a Hopeful View

Allow me to conclude with an attempt to appraise briefly the present position of the cancer problem, even if I speak with perhaps too little authority. If the position be reviewed calmly and without prejudice it surely shows reasons for much satisfaction. Progress towards an understanding of the actual nature of the disorder is increasing remarkably fast, and when a full understanding of this comes a happy solution of the whole problem will not be too far distant. New constellations of illuminating facts continue to appear above the horizon of knowledge, and it is not too much to hope that at any moment some pregnant item of new knowledge may appear among them which, like a pole star, will point directly to the right path for effective action. Such a consummation may come soon or in a more distant future. Meantime the patient efforts of investigators must continue.

With the assurance that fundamental knowledge concerning the actual nature of cancer is continuously increasing, together with the realization that success in treatment grows with the clinician's increasing skill and equipment, there is surely justification to-day for an optimistic outlook. It is most desirable that the lay public should be persuaded to share in such optimism.

THE SEBORRHOEIC DIATHESIS*

BY

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(WITH SPECIAL PLATE)

I understand from my medical dictionary that diathesis "is a term at present but little used." I know, too, that it is a little bold and bad of me to journey to Scotland and talk of seborrhoea. At the same time I believe we cannot too often stress the importance of the constitutional side of medical disorders in this age of scientific progress, and the evidences of those constitutional disturbances are constantly written upon and manifest in the skin for those who will regard them. The modern conception of seborrhoeic dermatoses is that they are infective, arising from the activity of organisms which normally inhabit the skin but which abound on a greasy one. To that view I cannot subscribe, and I shall endeavour to express a conception of these many disorders which in my view links them together and justifies the retention of the term "seborrhoeic," which many would abandon.

Literally the seborrhoeic is one whose skin is running with sebum, but this feature may not be very pronounced. It is a fact that such skins also tend to run with sweat, so that seborrhoea and hyperidrosis commonly go hand in hand. In talking, therefore, of seborrhoeic affections one must include hyperidrotic affections such as pompholyx of hands and feet. A second point to be borne in mind is the profound change which takes place in the skin and is essentially centred round glandular secretion at the time of puberty. Some of these changes are reflected in the increased growth of organisms which normally inhabit the skin, and are reflected still more strangely in the disappearance of the ordinary small spore ringworm of scalp (*Microsporon audouini*) and by the appearance of other infections such as the tinea versicolor infection (*Microsporon furfur*). One last point to which I would draw your attention before proceeding to my subject is that these seborrhoeic changes, though normally occurring in the skin at the time of puberty, may upon rare occasions arise as the result of lesions in the central nervous system, as in encephalitis lethargica, and may arise from disease or disorder of endocrine glands at times other than puberty.

Seborrhoeic Diathesis

In seborrhoea there is an increase of sebaceous secretion, which is altered and is more acid; and with this increase there is an overgrowth of the sebaceous glands and an enlargement of the pores. This phase tends to

* British Medical Association Lecture to the Fife Branch, read at Kirkcaldy on March 2, 1939.

produce some thickening of the surface layers of the skin, particularly about the enlarged pores, a condition described as kérose. In addition there is increased activity of the sweat glands, which I have previously mentioned. There is a tendency to vasomotor instability, often perniosis and chilblain development, and that non-pitting chronic oedema which gives the characteristic podgy clammy hands and stocky ankles and legs of puberty. There is an increased sensitiveness of the skin to ordinary external irritants, as a result of which seborrhoeics are regarded as bad industrial risks in trades that carry with them dermatological hazards. There is similarly an increased susceptibility to infections, particularly ordinary pyogenic infections such as boils, pustules, and carbuncles, perionychia, fissures, and similar conditions. It is difficult to imagine that such considerable physiological changes in the skin can emanate from any but a central source, and certainly the channel along which these influences are exerted, if not the original source, is a nervous one.

The next important point to consider, in my opinion, is the inevitability of similar changes in the mucous membranes: this is borne out abundantly by clinical evidence. In the upper respiratory tract the seborrhoeic shows a catarrhal mucous membrane with increased mucous secretion and boggy membranes. The membranes, like the skin, are sensitive to external irritants and to infection, with the result that these patients tend to suffer from chronic catarrh and hypertrophy of the mucous membranes, from spasmodic rhinorrhoea and hay fever, from thickened turbinates, infected antra, ethmoids, and other sinuses. Often there is a chronic polypoidal thickening of the mucosa of these sinuses. They have bad teeth and gums, pyorrhoea and gingivitis, caries and sepsis—a condition which the dentists describe as "soft teeth." In hospital practice it is almost the hall-mark of a seborrhoeic that he has a complete set of false dentures or that he should have such a set in his early twenties. The importance of this aspect of the seborrhoeic is that he tends to harbour foci of chronic infection about the upper respiratory tract which are difficult to clear and which have a chronic debilitating effect upon his health.

Similar catarrhal changes, often with a tendency to bronchitis and sometimes to asthmatic disorders, characterize the respiratory tract, but more important from our point of view is that the "seborrhoeic influences" extend to the gastro-intestinal tract, where they are frequently associated with an early dyspepsia of the functional flatulent type. Here there may be an excess of mucus with masking of hydrochloric acid and, what is probably more important, some degree of hypotonia. Apart from this there is commonly chronic constipation, and these two influences are often responsible for malnutrition of greater or less degree. The dyspeptic tends to adapt his diet to his dyspepsia, which is not helpful. This and impaired assimilation lead to an iron lack with secondary anaemia and to lack of vitamins, both of which changes may be demonstrable in the laboratory, though they are of significance, it may be assumed, before they reach these proportions. The diet best fitted to the seborrhoeic, and probably to those suffering from any catarrhal state, is the anti-retentional type of dietary, rich in proteins, restricted in carbohydrates, fluids, and salt, and rich in fresh foodstuffs. It is, of course, essential to avoid irritants and highly seasoned foods, fried foods, pork, and probably cheese. It is often necessary to give iron by mouth and vitamin preparations.

There are various minor variations from the normal, such as the secretion of a hyperacid urine, the exact significance and importance of which is not clear, but attention must be given to temperamental instability. This may vary from the sullen, sulky indolence of some of the heavier forms of acne to the garrulous, palpitating, highly strung overactivity of the rosacea patient. These nervous influences are probably of much greater significance, especially in many of the puberty affections, than we have previously imagined.

It will be seen that the greasy skin of the seborrhoeic is but one small indication or reflection of a constitutional state or diathesis which is of considerable importance, and the eruptions which we dub seborrhoeic are in fact reflections of disturbances of the constitutional state rather than infective conditions peculiar to the skin. While circumstances of health, employment, and environment generally may do much to promote the seborrhoeic state, this diathesis is probably an inherited one in the vast majority of cases. States of poverty and malnutrition; states of anxiety, stress, and strain; employment in hot, dusty atmospheres, as mining; and absence of light and fresh air are conditions which the seborrhoeic will not readily tolerate.

Treatment

The importance of these considerations lies in the guidance they must give one in the treatment of seborrhoeic affections. Before proceeding to any remarks upon particular seborrhoeic affections I would like to indicate those general points in the approach to and treatment of the seborrhoeic which in my opinion are essential to a proper conception of any and every one of the seborrhoeic ills. You will understand that it is not necessary for a seborrhoeic to suffer from any of these disturbances which I have mentioned so long as he is healthy in body and mind. It is also true that in one or two trivial seborrhoeic affections reasonably satisfactory results can be obtained by attention to local toilet measures alone. What I am particularly anxious to stress is that we should not regard scurf of the scalp as the beginning and end of all seborrhoeic affections, or the treatment of such scurf, if present, as the essential part in the cure.

Whether you are treating a simple affection like scurf of the scalp or a serious chronic seborrhoeic eczema and sycosis, it is important, first, that your patient should have any dyspepsia or constipation corrected and that he should be put on to a diet similar to that indicated above. It is important, secondly, that any infection in the nose, throat, and mouth should be eradicated, and in this connexion a careful history, particularly as regards influenza, a direct examination, and a simple transillumination of the antra will generally indicate the presence or absence of infection. Thirdly, the nervous and psychological make-up of the patient must be given some consideration, particularly in relation to his environment and to any changes occurring at or before the onset of the skin affection. Finally, it is desirable for the majority of seborrhoeics to adopt a strict toilet routine, including a weekly shampoo, a daily bath, the use of a dusting powder, and the wearing of cotton, preferably cellular cotton, undergarments. This may sound a somewhat elaborate approach to what is no more than a rash, but a little thought will convince you that it comprises no more than the simple clinical overhaul which is called for in any constitutional disturbance.

The disorders we have under consideration may be grouped under three headings: first, the simple, infective disorders; secondly, physiological disorders; and, thirdly, the major constitutional seborrhoeic disturbances.

Infective Seborrhoeic Disorders

The first group comprises merely scurf of the scalp and scurf of the body—that is, pityriasis capitis and pityriasis corporis which arises *in situ* and not as the result of scurf falling on to the body from the scalp. To effect control of these disorders it is sufficient to give attention to local treatment. As you are well aware, the scalp condition can generally be controlled by the regular use once a week of a soap-spirit shampoo, and the use of a weak mercurial or a sulphur and salicylic acid ointment for the severer cases. The milder cases are more comfortably treated with a lotion containing perchloride of mercury and resorcin, which is applied daily:

℞ Hydrarg. perchlor. ... ... gr. ij
Resorcin or euresol ... ... ʒ j
Industrial spirit ... ... ʒ ij
Aq. lavand. ... ... q.s.
Aq. ... ... ad ʒ vj

If you meet with a very obstinate case of scurf of the scalp which completely resists your usual attack, consider whether it may not be a psoriasis. Even though you cannot satisfy yourself that it is psoriasis of the scalp, the use of treatment suited to psoriasis may prove effective. In young babies seborrhoeic infections of the scalp may be ringed like seborrhoeic infections of the body, and may suggest a ringworm infection.

Pityriasis corporis generally clears with baths and an ointment such as the following:

℞ Ung. sulphur. ... ... ʒ j
Ung. zinci (1914) ... ... ad ʒ j

These patients should be warned of the necessity for regular toilet baths and the wearing of cotton garments next the skin.

Physiological Seborrhoeic Disorders

The second group consists of acne vulgaris and rosacea. The use of the old term "acne rosacea" should be abandoned for fear of confusing one condition with the other. In acne excessive secretion, in rosacea excessive flushing, are responsible for the reactions. In acne, which affects patients at puberty, there is generally a pallid, coarse, greasy skin and always blackheads, which, blocking the sebaceous glands, are responsible for retention of sebum. Secondary infection may now give rise to the characteristic papular and pustular inflammatory lesions related to the pilo-sebaceous follicles. These skins need to be washed vigorously and thoroughly to counteract the greasiness. In rosacea the skin is flushed and extremely sensitive, so that soap and water is best avoided, and whatever treatment is employed it should be of a gentle type and not of the vigorous peeling character used for acne vulgaris. Rosacea most commonly occurs in females at the menopause, though it may arise at other times, and may, of course, affect males. The papules in rosacea are not related to the glands.

Local treatment is of great importance in acne, and two measures may be stressed. In the first place *x*-ray therapy in small dosage, unfiltered, at proper intervals, is extremely valuable, since it diminishes the activity of the glands, which consequently get smaller. The "soil" is then no longer suitable for the development of acne lesions. The second measure is the use of sulphur in gradually increasing strength in a heavy calamine lotion, which should be "whitewashed" on the skin with a brush last thing at night before the patient retires to bed and immediately after washing thoroughly with soap and hot water:

℞ Sulphur. praecip. ... ... gr. xx
Calamin. ... ... gr. xxx
Zinc. oxid. ... ... gr. xx
Glycerin. ... ... ♏ xxx
Aq. calcis ... ... ad ʒ j

While these local treatments are of great importance, in a very large number of cases other considerations have to be taken into account. It is always wise to put these patients on an anti-retentional type of diet, and it is important that the nose, throat, and mouth should be in good order. In addition to this, however, quite small doses of thyroid are sometimes indicated, especially in the sluggish type of patient with a slow pulse, a chilblain type of circulation, and possibly chilblains themselves. One of the most difficult influences in acne is the nervous and psychological instability associated with puberty and the following years. Quite often it is helpful to give these patients a quarter of a grain of luminal at night over long periods; it makes them less anxious and disturbed over their mental stresses and strains and conflicts, and does not impair their vitality.

Luminal 1/4 grain at night is almost an essential in the treatment of rosacea, which is always an evidence of hypersensitiveness. The most effective local treatment, however, is the use of quite small doses of *x* rays at infrequent intervals combined with a 2 per cent. sulphur and salicylic acid ointment at night and the use of a simple soothing calamine cream by day. This treatment, which was suggested by MacCormac, is remarkably effective, and though rosacea patients must generally expect relapses from time to time, at long intervals, especially over the phase of the menopause, the rapid relief given is a considerable help psychologically. I will not dwell here upon attention to diet and pelvic troubles.

Constitutional Seborrhoeic Disturbance

The third group of affections consists of those which are essentially constitutional seborrhoeic manifestations. They include, first, eczematous symptoms. These may be localized or widespread and of the acute, subacute, or chronic type. Common examples are the eczemas about and behind the ears; eczemas in flexures, especially the axillae, groins, and perineum; eczemas of the pompholyx type affecting hands and feet; and eczema of the nape of the neck. Any of these affections may become more extensive and widespread, and they may be dependent upon any of those important constitutional considerations which I stressed earlier in this lecture; but by far the most common underlying factors in such cases are psychological and nervous considerations. These may be no more than general nervous debility from wear and tear or the reaction from anxiety or worry, from shock or prolonged nervous strain. It is important to discuss the aetiology with the patient and to get his co-operation, both in elucidating and in treating this aspect of the problem. It will, however, help considerably in the relief of symptoms and in re-establishing the patient's confidence if he is put on sedative-tonic measures internally, such as luminal 1/4 grain or the following mixture:

℞ Pot. brom. ... ... gr. x
Sp. ammon. arom. ... ... ♏ xv
Tinct. nucis vom. ... ... ♏ iv
Infus. gent. ... ... ad ʒ ss

Here again, if the affection is not too widespread, the use of *x*-ray therapy may be most valuable, particularly

in relieving itching and preventing aggravation of the affection by rubbing and scratching. The local treatment is the same as for ordinary constitutional eczema, simple pastes of the modified Lassar type being most valuable, especially with the addition of prepared coal tar.

Less irritating than these nervous eczematous cases, and generally very much more resistant and widespread, are the seborrhoeic eczemas dependent upon factors of malnutrition. Blood counts, test meals, and vitamin tests will generally indicate fairly marked degrees of malnutrition in these patients, and the case which I illustrate here is a very characteristic example. This patient, I may say, worked eight to nine hours a day for six days a week for a salary of fourteen shillings, and I think such a case will indicate to you the great importance of the general outlook upon this problem rather than the more limited conception of seborrhoeic disorders as of external infective origin. Dietetic treatment, the administration of iron and vitamins by mouth, general ultra-violet-light irradiation of the whole body, and even the use of cod-liver oil as a local application to the skin are measures particularly indicated in this group. (Plate, Figs. 1 and 2.)

From this we pass to the last group of seborrhoeic eczemas, often associated with seborrhoeic sycosis, which are so distressing and intractable. They are characterized by sticky, oozing, pustular, scabbed, and foul eczematous dermatitis in all the sites I have previously mentioned, but particularly affecting the head and about the ears, the eyebrows, eyelids, and beard area. Local treatment, even including *x*-ray therapy, is often without avail in these cases. They can be cleaned up with starch and boric poultices and fomentations, only to leave a fragile, red, glazed, inflamed skin which within the course of another hour or two becomes covered with small subcuticular pustules which, on the beard particularly, affect the hair follicles. All these cases show some degree of malnutrition, though it may not be of an extreme degree. What is, however, most important is chronic focal sepsis, generally affecting nose, throat, or mouth, and this is hardly ever absent. In the case of a little girl with chronic infected seborrhoeic eczema of the head and face, ears, and flexures, the antra, ethmoids, and sphenoidal sinus contained pus, the gums were infected, and the teeth were degenerate. More often the finding is one of a chronic thickened, hypertrophied, infected, and polypoidal mucous membrane, in which simple drainage of the antra is of little avail. A complete radical operation alone will clear the infected antrum, and unfortunately the majority of cases have infection of this most difficult type. I am convinced, however, that unless the provocative source of the trouble is satisfactorily dealt with these cases remain incurable. It is probable that any operative measures undertaken should be followed by anti-infective measures by mouth and general ultra-violet-light irradiation of the whole body, and any similar therapy likely to increase the patient's resistance to chronic infection.

So far as local application to the skin is concerned in this last group, fomentations, starch, and boric poultices and the use of a brilliant-green or a gentian-violet paint are helpful. Some cases respond to mercury and tar in some such application as the following:

℞	Hydrarg. ammon.	gr. x
	Pic. carb. praep.	gr. xx
	Zinc. oxid.	gr. cxx
	Paraff. moll. ... ... ad	℥ j

Another useful ointment is ung. quinolor co. (Squibb).

Conclusion

These points in treatment of some of the more common of the seborrhoeic disorders illustrate the general principles which I have tried to stress in the earlier part of my lecture. They also remind you, I hope, that the skin is an essential part of the whole organism and reflects most valuably general physiological and pathological changes in that organism. This group of skin disorders illustrates the importance of dermatology in the training of the medical student and the significance of skin disorders to the practising physician.

Summary

It is suggested that the problems of seborrhoeic disorders are related to and dependent upon the seborrhoeic diathesis and not to any great extent upon seborrhoeic or other organisms.

The disturbances of physiological function characteristic of the diathesis are manifest particularly in the membranes of the upper respiratory and gastro-intestinal tracts as well as the skin. As a consequence seborrhoeic patients are subject to chronic infection of the upper respiratory tract and to dyspepsia and malnutrition.

These conditions, together with the underlying nervous and temperamental instability, have an important bearing on aetiology and treatment.

ANTHRA-SILICOSIS AND BRONCHIAL CARCINOMA WITH QUIESCENT TUBERCULOSIS

BY

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(WITH SPECIAL PLATE)

The increasing incidence of bronchial carcinoma is a widely recognized fact, and statistical surveys in recent years (Duguid, 1927; Simpson, 1928; Kennaway and Kennaway, 1936) suggest that this increase is real, and not merely an apparent one due to improved facilities for observation and more accurate diagnosis. On the other hand, Hadfield and Garrod (1938), who quote Passey and Holmes (1935), against the majority of available evidence, consider that the matter is still *sub judice*. Study and investigation of the aetiological factors of the disease are therefore of particular importance, and with the growing tendency to regard cancer as the product of prolonged mechanical or chemical irritation of an organ with "constitutional and inherited inferiority" in an individual with an intrinsic susceptibility to neoplastic formation (Hurst, 1939), it is inevitable that attention in bronchial carcinoma should be directed towards inhaled irritants. In a condition such as anthra-silicosis, in which chronic irritation of the bronchi and lung by both coal and silica is the outstanding feature, a relatively high incidence of primary bronchial carcinoma might be anticipated. A number of such cases of cancer associated with silicosis have been reported from all parts of the world during recent years, including the studies by Schmorl (1928) on Schneeburg cancer, in which some factor in addition to *mechanical* irritation would seem to be most active, and by Pancoast and Pendergrass (1933), Dible

(1934), Fine and Jaso (1935), Charr (1937), Anderson and Dible (1938), Turner and Grace (1938), in addition to the Kennaways (1936). At present no definite conclusion has been reached, but that the Silicosis Board in this country is taking serious cognizance of the facts is known.

The following case is recorded because it presented the association of bronchial carcinoma and anthra-silicosis with quiescent tuberculosis, because the difficulty of establishing the diagnosis during life was considerable, and because several features of unusual interest became apparent during the clinical course, at the post-mortem examination, and during subsequent legal proceedings; also it indicates the need for more thorough investigation of such cases, and may "call attention to the need for publishing the post-mortem changes in a large series of cases of silicosis . . . as the recorded instances are as yet too few to be significant" (*British Medical Journal*, 1938).

Case Report

A labourer aged 38 attended a London general hospital in May, 1938, complaining of anorexia, loss of weight, and lassitude of five months' duration, and, more recently, cough and right lumbar pain. Until two years previously he had been a miner of "steam coal" in South Wales for twenty-two years, working mostly at the coal face. The history of this occupation, together with the symptoms and signs which were found, led to the diagnosis of tuberculo-silicosis. Tubercle bacilli were not found in his sputum, and a radiograph of his chest showed "infiltrating inflammatory changes in the left upper, right middle, and lower zones, and possibly left apex—probably phthisis, but not definitely so."

He was referred to the Brompton Hospital towards the end of May. He then complained of lassitude, sweating, loss of weight and strength, cough productive of a small amount of muco-purulent sputum, dyspnoea, and pleuritic pain low down on the right side of the chest and back. He was manifestly ill, wasted, and febrile. An impaired note to percussion was found at both apices, while at the right base there was an area of dullness, poor air entry, and numerous moist rales. His sputum again contained no tubercle bacilli. Radiological examination of the chest showed a mediastinum normal in position, slight restriction of the movements of the right side of the diaphragm, and an area of partial consolidation at the right base, while throughout both lungs changes consisting of diffuse stippled shadowing, compatible with pneumonoconiosis, were shown. At the apices the appearances were those of added infiltration due to pulmonary tuberculosis (Plate, Fig. 1).

The patient was transferred to St. Mary's Hospital, where the above history and chest signs were confirmed; but in addition routine examination showed generalized abdominal tenderness, with resistance most marked in the right upper rectus. This was thought to be due to diaphragmatic irritation. There was no clubbing of the fingers, and no enlarged glands were palpable. Other systems were clinically normal. Radiological examination of the chest showed changes consistent with the early nodular phase of silicosis, with superimposed tuberculosis at both apices and in the right lower lobe, where early cavitation seemed to have occurred. Relatively slight basal pleural involvement was shown. The blood sedimentation rate was 63 mm. in one hour (Westergren). Repeated sputum examinations again failed to show tubercle bacilli, and no doubly refractile bodies could be seen under polarized light. His condition deteriorated in spite of absolute rest and symptomatic treatment for cough and pain. A month after admission he developed transient glycosuria for two days, but a blood sugar curve two days later was normal. He next developed symptoms and signs suggestive of involvement of the central nervous system. These were mainly on the left side of the body, and included temporary and varying loss of power, pains and cramps in the left arm and leg, with sensory loss which varied from day to day.

Late in June, in the course of routine re-examination, the abdominal resistance was found to have decreased, permitting the recognition of an enlarged tender nodular liver, which extended nearly to the umbilicus. This finding cast doubt on the original diagnosis, and suggested either that the case was one of carcinomatosis or that a carcinoma with hepatic secondaries had occurred in a case of tuberculo-silicosis. Immediate search was made for other secondaries. Radiological examination of the skeleton showed three doubtful metastases in the right femur and in the third and fourth lumbar vertebrae. A blood count showed 4,500,000 red cells per c.mm., with 98 per cent. haemoglobin and a colour index of 1.1, and 27,000 white cells, of which 86 per cent. were polymorphs and 14 per cent. lymphocytes. Two myelocytes, six nucleated reds, and numerous Howell-Jolly bodies per 100 white cells were seen. An early leuco-erythroblastic anaemia was therefore present, which strongly suggested carcinomatosis of bone marrow. Multiple metastases in the brain were suspected as the cause of the somewhat vague symptoms and signs in the nervous system, while the hepatic condition, with probable pancreatic metastases, might have been responsible for the transient glycosuria.

Though pain and cough did not increase, the patient's general condition continued to deteriorate; he wasted rapidly, became mentally confused and incontinent, and early in July died of a terminal bronchopneumonia.

Post-Mortem Examination

Necropsy showed the double condition of anthra-silicosis of the lungs, most marked in the upper lobes and apices, and carcinoma of the right lower lobe bronchus; there was slight terminal bronchopneumonia (Fig. 2). The right pleura was thickened, and through it at the base grew the branches of an aspergillus. There were extensive anthracotic deposits throughout both lungs, but no microscopical evidence of any tuberculous involvement or caseation of the whorled, nodular, fibrous, silicotic areas, where the compact centre was surrounded first by a zone of collagenous fibrous tissue, then by a zone of compressed lung tissue heavily laden with black anthracotic pigment, which faded out into comparatively normal lung (Fig. 3). However, a guinea-pig injected with a saline suspension of the lung died of generalized tuberculosis in early April, 1939, nine months later. The carcinoma was a typical small oat-cell growth, surrounding and compressing the bronchi, with their cartilage and mucous glands (Fig. 4). Metastases were found in the regional glands, in the liver—which weighed approximately 6 kg. and was studded with growth—and in the skeleton (long bones and skull); and a few were seen in the pancreas.

Chemical analysis of the lungs as compared with a normal control showed a greatly increased silica content—between eight and nine times normal:

	Present Case	Control
Silica in fresh lung ..	2.83%	0.31%
Silica in dry lung.. ..	12.43%	1.56%

Causes of Death

These were certified as bronchopneumonia, carcinomatosis from bronchial carcinoma, with silicosis as an associated condition. The mention of silicosis—an industrial disease—necessitated a coroner's inquest. Here the jury, on the direction of the coroner, after hearing the medical and pathological evidence, returned a verdict of death from misadventure—death in their opinion resulting from "bronchopneumonia and carcinomatosis, following carcinoma of the bronchus caused by silicosis due to his occupation as a coal-miner." As a consequence of this verdict the dependants claimed compensation, and in due course the case came before the Silicosis Board. During its consideration a representative of the board pointed out that in law silicosis and carcinoma of the lung had as yet no proved aetiological relationship,

whatever medical evidence might be adduced to the contrary. At the moment of writing, the dependants inform us that the question of compensation has not yet been settled, but indicate that if their legal advisers consider the verdict of the jury sufficient to justify it, the Miners' Federation, who have taken over the case, will pursue the claim further.

This case may most profitably be discussed under the heading of clinical, radiological, pathological, and medico-legal, of which the first and last are of most concern to the general practitioner, while the second and third interest rather the hospital consultant, radiologist, and pathologist.

Clinical Points

Clinically three points arise. First is the importance of the treble diagnosis, which was for so long overlooked by three large hospitals with all the facilities for full investigation. Diagnostic difficulties during the patient's life were, however, considerable. The occupational history, together with the radiological appearances, suggested that silicosis was present, while the advent of toxaemia, anorexia, sweating, loss of weight, and a productive cough made it seem probable that pulmonary tuberculosis had supervened. Alternatively the possibility of chronic pulmonary tuberculosis complicated by a subacute miliary spread was considered, but was regarded on radiological grounds as less likely than the above.

The second point is the fact that this delay in recognition was due to the difficulty of differentiating the clinical symptoms and signs of phthisis from those of carcinoma —cough, pain, dyspnoea, wasting, and sputum. The differential diagnosis in the presence of silicosis is rendered doubly difficult because the association of tuberculosis with silicosis is an accepted medical and legal one, whereas that of a carcinoma with silicosis is a less frequently occurring and less generally recognized condition. In this case, as shown by the long-delayed death of the injected guinea-pig, tuberculosis was present, but it should be classified as quiescent rather than as active. The toxaemic symptoms are much more likely to have been due to the carcinoma than to the tuberculosis, but the emphasis on the latter led to the overlooking of the former. As Charr (1937) points out, the persistently negative tests to tubercle bacilli in sputum from a known or suspected silicosis with such toxic symptoms should excite a suspicion of malignant lung growth.

The third point is the importance of considering the possibility of carcinoma in a middle-aged man in the presence of any chest symptoms. This matter was recently fully discussed at the Royal Society of Medicine by Roberts, Davidson, Mason, and Lakin (*British Medical Journal*, 1939), who emphasized the urgency for full investigation at the very first onset of chest symptoms, so that the condition might be recognized at a sufficiently early stage for something more than palliative treatment to be given. The significance of persistent pain over the base of the right lung was not in this case sufficiently emphasized.

Radiological Appearances

Radiologically the case illustrates the difficulty in diagnosis, even in the presence of full clinical findings, between an inflammatory and a neoplastic pulmonary lesion. Pendergrass (1938) discusses this fully in relation to the pneumonoconioses, and he also considers the associated presence of tuberculosis and carcinoma; while in occupational diseases in general the British Institute of Radiology (1938) concluded that the diagnosis of such cases must be largely based on radiological appearances, for the proper interpretation of which the occupational history, with a knowledge of the minutiae of each occupation, is essential. In the present case we were perhaps a little blinded by the emphasis on occupational history.

Pathological Discussion

The association between chronic irritation due to inhaled dust particles containing silica and the development of carcinoma is one which has recently attracted attention, and to which reference has already been made. Though Valade (1939) questions the validity of the application of animal experiments to man, pathological studies such as those of Willis (1928), Willis and Brutsaert (1928), and Campbell (1937) are significant and have shown that the epithelium of the bronchial mucosa undergoes a hyperplasia as a result of chronic irritation by inhaled dust of this type, and that tar-free dust containing 44 per cent. silicon dioxide increases the incidence of primary lung carcinoma in mice by 45 per cent., but not to so great an extent (74 per cent.) as when tar also is present. Analogous combined chemical and physical irritation arising in industrial life may therefore well be responsible for cancer in man, and in the particular case cited above, the hydrocarbons of coal, which some observers have suggested may to a certain extent protect against tuberculosis, may be the relevant chemical factor. Dible (1934) points out that the rarity of tuberculosis in his cases of silicosis with malignant disease tends to suggest that a degree of resistance to this disease, perhaps unusually well developed, may have permitted an exceptionally long exposure of the tissues to the irritant agent. Similarly Turner and Grace (1938), commenting on the figures of Rennie (1933) on the mortality of grinders from tuberculosis, rightly point out that most of this respiratory mortality operates before the cancer age, therefore depleting the ranks of the potential carcinoma victims. In spite of this depletion they find a great increase of both silicosis and cancer in the Sheffield grinders. In this connexion one is impressed with the fact that throughout an extensive study of the literature carcinoma seems, with the exception of one case of Dible's, to be associated, not with *active* tuberculo-silicosis, but almost entirely with anthra-silicosis. Though this may be a fortuitous association, yet in view of Campbell's work one cannot help wondering how large a part in the carcinoma causation is played by the chemical action of the carbons of the anthracosis superadded to the physical and chemical action of the silica in silicosis production.

In spite of the accumulating mass of evidence, and the conclusion of Anderson and Dible that "as a group of cases of pulmonary carcinoma exists in which the organs contain an excess of silica and show histological evidence of silicotic fibrosis, the role of silicosis is definitely aetiological," I cannot but agree with Gloyne (1938) that the data we possess at the present time are not sufficient to justify any dogmatic statement, and that we cannot do more than regard the association of silicosis and carcinoma (and of asbestosis and carcinoma) with suspicion. There is, however, room for more work and for reports of more cases, together with full post-mortem findings.

The Medico-Legal Aspect

This aspect is one that may be brought to the notice of any practitioner who signs a death certificate in which carcinoma and silicosis are mentioned together. That both existed in this case was proved pathologically and

chemically, for the normal silica content of dried lung does not exceed 0.2 per cent., and Sladden (1933) has reported that a silica content of more than 1 per cent. is usually accompanied by an important and radiologically recognizable degree of fibrosis, while a content of over 1.6 per cent. occurs only in lungs with severe fibrosis sufficient in itself to cause death. Belt, Irwin, and King (1936) consider that reliance must not be placed on chemical analysis alone in establishing the existence of silicosis; in this they are supported by Middleton (1936), who emphasizes that since silicosis is caused by particles less than 10 μ in diameter, and since much larger particles may be included in the chemical analysis, much more silica will be demonstrated by this means than is necessarily exerting a pathological fibrotic effect. Therefore, in order to establish a diagnosis beyond doubt the combination of clinical, radiological, microscopical, and chemical findings is desirable. In this particular case the presence of both silicosis and carcinoma was accepted by the representative of the Silicosis Board, but the aetiological connexion between the irritation and the fatal carcinoma was not, in the present legal position, admitted. At the time of writing the dependants await the ultimate legal decision with interest. Whatever that may be, as the evidence and literature accumulate, the compensation laws of silicosis, summarized recently by Davie (1937), may shortly have to be altered to fit in with accepted medical facts. That the law lags behind medicine in many respects is agreed, as, for instance, in the association between tuberculosis and silicosis, which was not recognized till the 1925 Scheme, following the House of Commons' acceptance in 1924 that the presence of the former made the latter a more dangerous disease. In a recent review of the medico-legal aspects of coal-mining, Fisher (1938), in discussing silicosis, makes no mention of carcinoma and very little of tuberculosis, leaving the impression that from the medical standpoint, even in respect of pure uncomplicated silicosis, the present law is not entirely satisfactory. The whole question of chronic pulmonary disease of a disabling nature which does not come within the accepted definition of silicosis is being studied by the Medical Research Council (1937–8) at the request of the Home Office Mines Department, and some change in the present legal position seems likely. In this case an acceptance in law of the importance of silicosis in predisposing to carcinoma would greatly benefit the dependants.

Summary

A case of combined anthra-silicosis and bronchial carcinoma with quiescent tuberculosis in a Welsh coal-miner resident in London is recorded, with full post-mortem findings. The difficulties of diagnosis during life are discussed, and the implications of the association between chronic physical and chemical irritation and the development of neoplasm are considered from the clinical, radiological, pathological, chemical, and medico-legal viewpoints, with reference to some of the modern literature.

It is a pleasure to record my thanks for much advice and assistance on the various aspects of this case; especially to Dr. W. D. W. Brooks for permission to report it, to Professor W. D. Newcomb for the pathological work and the photomicrography, to Dr. Roche Lynch and Dr. R. H. Slater for the chemical analyses, to Dr. E. Rohan Williams for assistance with the radiology, and to Drs. M. Davidson and G. T. Hebert for their kindly criticisms.

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THE ORAL APPLICATION OF METHYL TESTOSTERONE AND ITS SIMPLIFICATION OF ANDROGEN THERAPY*

BY

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(WITH SPECIAL PLATE)

Recently I described the substitution effect and dosage of testosterone (tablets of 2.5 mg.) given to a post-puberal eunuch (Foss, 1938b, 1939). It was found that 100 mg. daily produced very mild potency, and a ratio of 20:1 was suggested as the comparison of this oral effect with that by subcutaneous injection. Although the oral route is to be preferred to the percutaneous inunction (Foss, 1938a; Loeser, 1938a, 1938b) or injection, especially where long-continued substitution therapy is necessary, it is wasteful, expensive, and rather inefficient.

Miescher and Tschopp (1938) have demonstrated that methyl testosterone is considerably more active by mouth than testosterone, androstanediol, androstenedione, testosterone propionate, and androsterone in castrated male rats as shown by the increase in weight of the seminal vesicles and prostate. They suggested that possibly greater protection of the active hydroxyl group from fermentative influences in the alimentary canal was acquired from the adjacent methyl group.

Case Reports

The following report describes, from both the subjective and the objective points of view, the clinical trials of methyl testosterone which I have conducted since February 1 of this year.

Case 1.—Methyl testosterone was given to the post-puberal eunuch, already described (Foss, 1937, 1938b, 1939), after fourteen days' rest from previous treatment, when complete impotence had returned. A dose of 100 mg. was given daily, divided into ten tablets of 10 mg. This dose was taken for

* This paper was received from the author on May 2, 1939.

seven days. After about three days the effect was excellent, and full potency with erection, coitus, and orgasm with ejaculation was obtained. The dose was then reduced to 50 mg. daily, and the maintenance effect was a little stronger than when 100 mg. of plain testosterone had been taken: erection was not fully turgid, although the effect was generally satisfactory. Potency continued on this daily dose for thirteen days. More recently this therapy was repeated for seven days and the total urine output was collected for the assay of excretion products at the National Institute for Medical Research. During the period April 12 to 19, 1939, the total urine output was collected while he took a total dose of 350 mg. of methyl testosterone. The results so far as they have been obtained are: (1) 17-ketosteroid excretion (colorimetric): 10.5 mg. a day. (This is probably a significant increase over his normal level.) (2) Androgen excretion: about 15 I.U. a day. (Probably no increase.) (3) Oestrogen excretion: less than 35 I.U. a day. (This is not more than a normal male, and is certainly less than when he was getting testosterone propionate.)

HYPOGONADISM

Visual evidence of the efficacy of this hormone by the oral route has been obtained in two cases of hypogonadism in boys, and is demonstrated by the rapid growth and development of the genitalia, by the increase in weight, height, and muscular development, and by the growth of pubic hair.

Case 2.—A boy with mild obesity was selected, as his penis was minute, measuring 2 cm., including the prepuce. He was 10½ years of age, weighing 104½ lb. and measuring 55½ inches in height. Both testicles were in the scrotum, and there was no pubic hair. He was photographed (Plate, Fig. 1) on February 1, and treatment was started with a daily dose of 50 mg. of methyl testosterone by mouth (five 10-mg. tablets). After fourteen days he had noticed some slight discomfort in the perineum, while the scrotum seemed loose. In twenty-two days his penis measured 4 cm. and the scrotum was pendulous. After thirty-six days' therapy with 1,800 mg. he was photographed again (Fig. 2). Treatment was stopped after fifty-seven days, when he had taken 2,850 mg. The results of therapy are as follows: (*a*) increase in weight of 5½ lb.; (*b*) increase in height of 1 inch; (*c*) penis measured 4.5 cm. long and 9.5 cm. in circumference at the glans, and erections were admitted; (*d*) early development of pubic hair; (*e*) considerable increase in size of pendulous scrotum, with thickening and corrugation; (*f*) development of epididymes and maintenance of firm testes; (*g*) a bright pink colour of the penis and scrotum presumably due to increased vascularity; (*h*) increased muscular development, also fullness of the face with better colour; (*i*) improvement in appetite and vitality.

Case 3.—A thin boy aged 11½, undeveloped physically, weight 60¼ lb., and 57 inches tall, was chosen for his hypogonadism. His circumcised penis was minute and measured 2 cm. A very small right testicle, 1/2 inch in length, was in the scrotum and the left testicle was palpable at the external ring; there was no pubic hair. Photographs were taken on March 8 (Figs. 3A and 4), and treatment was started with a daily dose of 30 mg. methyl testosterone (six 5-mg. tablets). He was photographed again on April 19 (Figs. 3B and 5) after a total dose of 1,230 mg. in forty-one days. The results of therapy are as follows: (*a*) increase in weight of 12¾ lb.; (*b*) increase in height of 1/4 inch; (*c*) penis measured 4.75 cm. long and 7.5 cm. in circumference at the glans, and erections occurred occasionally; (*d*) pubic hair was growing; (*e*) the scrotum was pendulous and rugose, also thickened; (*f*) development of epididymes, which appeared to drag the testes lower into the scrotum; (*g*) the bright pink colour of the penis and scrotum was well marked; (*h*) a remarkable muscular development and increased fullness of face; (*i*) a large appetite and greater vitality.

In both these cases the changes produced in forty-one and fifty-seven days (using 1,230 mg. and 2,850 mg. of methyl testosterone) are literally amazing and might well be disbelieved without photographs. They demonstrate not only a sexual but a general metabolic effect similar in all respects to that produced by injections of moderate doses of testosterone propionate or occurring naturally, but more slowly, at normal puberty.

DYSMENORRHOEA

Cases 4, 5, and 6.—Methyl testosterone, 10 mg. daily, was given to three patients with dysmenorrhoea for whom some relief had been found from injection of testosterone propionate. In two it was taken for fourteen days immediately before menstruation, with no improvement, but the third obtained relief, taking the methyl testosterone in the middle of the cycle.

Toxicity

The eunuch complained of some symptoms such as slight nausea, anorexia, and dyspepsia, which were relieved by a little alkaline mixture. It is hoped to extend this trial shortly, embracing a larger series of cases.

Summary and Conclusions

Methyl testosterone is very efficacious by mouth, being about twice as active as testosterone by this route.

Potency was fully maintained in a eunuch with 100 mg. daily, and a lower dosage of 50 mg. is effective. All the signs of puberty can be rapidly produced in cases of genital hypoplasia affecting not only sexual but physical development, and for such patients it is probable that much smaller doses would be adequate.

If methyl testosterone can be manufactured economically and inexpensively in large quantities it is suggested that oral therapy with this androgen may ultimately replace all other methods of using testosterone or its propionate.

Probably this very potent androgen will be available as soon as more extended toxicity trials have been made, and it would seem wise that its sale should be restricted to a signed prescription. The price will in some respects control the sale of very large doses, but its misguided use in uncontrolled cases may give rise to serious consequences, as it must be remembered that several undesirable effects can be produced by very large doses of androgen in women or in young boys, and possibly there are other results of which we are yet unaware.

I am indebted to Dr. R. K. Callow and Mr. C. W. Emmens for the hormone assays of excretion products in the urine, and to Professor T. F. Hewar for facilities for photography; also to Dr. H. Neumann of Schering Ltd. for tablets of 10 mg. of methyl testosterone and to Dr. A. Macbeth of Organon Laboratories for tablets of 5 mg.

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In the latter part of May a symposium on visual fatigue was held in Washington and was attended by approximately forty people representing different research interests and institutional connexions. It seems probable that research in the general field of visual fatigue will be undertaken by the Committee of the National Research Council on Scientific Aids to Learning. The organizer of the symposium was Dr. Walter R. Miles, chairman of the Committee on Visual Fatigue. His address is Yale University, Institute of Human Relations, 333, Cedar Street, New Haven, Connecticut.

M & B 693 RASHES

WITH PARTICULAR REFERENCE TO ACUTE EXANTHEMATA

BY

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(WITH SPECIAL PLATE)

Of recent years the encouraging results attending the introduction of the chemotherapeutic group of drugs have led to their widespread employment in many different types of infection. These new preparations are of special importance in fever hospital practice, not only from the point of view of therapy, but also because they may be associated with eruptions closely simulating the rashes of the common infectious diseases. This applies in particular to 2-sulphanilylaminopyridine (M & B 693), now widely prescribed for children with acute respiratory and other infections, and may lead to difficulties in differential diagnosis during future epidemics of the acute exanthemata. Sulphanilamide rashes, which tend for the most part to be morbilliform in type, have been described in detail, in association with the related blood changes, by Schlesinger and Mitchell (1938), but in my experience such eruptions occur less commonly than do those following M & B 693. Recent publications on therapeutic trials with this drug contain but scant reference to the appearance of drug rashes, which are variously referred to as blotchy, erythematous, papular, or morbilliform, at times exhibiting a photosensitive distribution. The usual time of onset of these eruptions appears to be between the eighth and the twelfth days of administration, and although they may occur after shorter or longer periods, it should be noted that the average interval falls within the incubation periods of the common infectious fevers. Three examples in patients recently admitted to the South-Eastern Hospital, each bearing a close resemblance to one of the more common eruptive fevers, are described below.

M & B 693 Rash resembling Measles

A girl 9 years of age was admitted in December, 1938, with acute follicular tonsillitis and right otitis media. She was given M & B 693, two tablets (that is, 1 gramme) every eight hours, and the routine ear toilet was carried out. The throat rapidly became clear, and five days later the ear discharge ceased, although the perforation, which was sealed by a flake of lymph on the ear drum, was not yet healed. Eight days after first taking the drug the child developed a blotchy macular eruption on the face, neck, wrists, and forearms, suggesting photosensitivity, while the trunk showed a crop of fine macules. The features were puffy, but there was no catarrh, Koplik's spots, or lymphadenitis (the child gave a past history of measles). The dosage of M & B 693 was halved, and on the following day the rash became generalized and very heavy, the character and distribution being highly suggestive of measles. Coarse blotchy terra-cotta-coloured macules, confluent on the face, gave a bloated appearance, but there were no catarrhal signs (Plate, Figs. 1 and 2). The temperature rose 2° F., the patient was lethargic and complained of headache but no cough, while the buccal mucosa and fauces were normal. A blood count performed on the following day showed haemoglobin 72 per cent., red cells 3,800,000, colour index 0.94, leucocytes 17,000, with 70 per cent. polymorphonuclear neutrophils, 4 per cent. eosinophils, 23 per cent. lymphocytes, and 3 per cent. monocytes.

On discontinuing the drug the rash gradually faded over a period of eight days, leaving a staining indistinguishable from that which follows a heavy measles rash. Ten days later the otorrhoea recurred, and a test dose of 1 gramme M & B 693 was administered. This was followed in one and a half hours by headache, vomiting, rise in temperature, and the rapid development of the morbilliform eruption, as described, which became generalized within a period of three hours.

It would appear that this child had developed a marked sensitivity towards the drug, and similar cases have been observed after sulphanilamide (Schlesinger and Mitchell, 1938; Schonberg, 1937). It is not at present known how long this sensitivity may last, but it is possible that administration of this drug to a previously sensitized patient on some future occasion may be attended with alarming symptoms. Recently I observed a pronounced idiosyncrasy in a patient with pertussis bronchopneumonia who developed a rash similar to the one described above, eighteen hours after receiving 1.5 grammes of the drug. Severe stomatitis, cheilitis, and a vesicular eruption on the face were additional features in this case, which resembled the one recently described by Davis (1939) (Plate, Fig. 3). Agranulocytosis was excluded after a blood count which showed red cells, 4,930,000; haemoglobin, 84 per cent.; colour index, 0.85; leucocytes, 31,000, with 86 per cent. polymorphonuclear neutrophils, 8 per cent. lymphocytes, and 6 per cent. monocytes; while a stained film was normal. Smears and cultures from the mouth and fauces were also negative for Vincent's organisms, streptococci, and diphtheria bacilli. The rash was followed by heavy and persistent staining and a generalized desquamation of the "pin-hole" type. The child ultimately recovered.

M & B 693 Rash resembling Rubella

This rash is typical of the more common type of toxic eruption following M & B 693.

A girl aged 4 was admitted on March 13, 1939, suffering from pertussis in a moderately severe form. There were marked signs of pulmonary catarrh, and she was given M & B 693, 0.5 gramme eight-hourly. Ten days later the temperature rose to 100° F., and a well-marked finely macular roseolar eruption developed, the distribution being general, with a tendency to become confluent on the arms (Plate, Fig. 4). The tongue and fauces were normal, but the superficial lymph glands generally were palpable. There was a previous history of measles. On discontinuing the drug the patient became afebrile and the rash completely faded in forty-eight hours. On March 28 a test dose of 1 gramme of M & B 693 was administered, and this was followed the same evening by a rise in temperature to 103° F. and a profuse recurrence of the previous type of rash. She also became cyanosed and complained of cramps in the legs and feet. The following morning the temperature fell to normal, the rash had become scarlatiniform in type on the trunk, and there were tingling sensations in the feet. Twenty-four hours later the rash and paraesthesiae had vanished, and her subsequent progress was uneventful.

With regard to these drug eruptions in whooping-cough patients, the writer had on two occasions recently observed the rash to be petechial on the face but not elsewhere, and in only one of these cases was the attack severe.

M & B 693 Rash resembling Scarlet Fever and followed by Acute Exfoliative Dermatitis

The patient, a man of 21, had an appendix abscess drained at another hospital on January 19, and between January 28 and February 16 he was given M & B 693 in 1-gramme doses thrice daily. He had also been having ultra-violet light treatment three times a week, the last exposure being given on February 20. On February 15 the patient developed a generalized morbilliform rash, which subsided and was followed by a rise in temperature and a generalized scarlatiniform eruption of an irritating character. He was admitted to the South-Eastern Hospital with a diagnosis of

scarlet fever on February 23, when his temperature was 102° F. An intense confluent erythema was present on the trunk and a maculo-papular rash on the distal portions of the extremities. There was slight generalized subcutaneous oedema with puffiness of the face, eyelids, and pinnae, and some branny desquamation of the face and scalp. Submucous haemorrhages were seen in the buccal mucosa, but the tongue and fauces were not suggestive of scarlet fever. The Dick and Schultz-Charlton reactions were negative, and repeated swabs from the throat, nose, and appendix wound were also negative for haemolytic streptococci. The urine was normal throughout. Two days after admission an irritating eruption of miliary vesicles appeared on the trunk, and the patient remained febrile for five days. The cutaneous oedema, erythema, and branny desquamation persisted, developing into a generalized exfoliative dermatitis which later involved the palms and soles, with much dryness and irritation of the skin, made worse by exposure to direct sunlight. Three weeks later he was discharged quite fit apart from the skin condition, which persisted in a modified form. There was no history of asthma or urticaria.

The morbilliform-scarlatiniform sequence in the character and development of eruptions due to M & B 693 has been described by others, though it is probable that in this case exposure to ultra-violet light had aggravated the condition. Photosensitivity in association with the sulphanilamide group of drugs has been repeatedly noted, and severe rashes of a similar nature (scarlatiniform) have been recorded by Newman and Sharlit (1937) after sunbathing. Recently Hallam (1939) has described a severe cutaneous and general reaction following exposure to ultra-violet light in a patient who had been receiving M & B 693, and he lays emphasis on the dangers attendant on such a procedure.

Summary

Attention is drawn to the commoner types of drug rash following treatment with M & B 693 and their possible confusion with the eruptive fevers, especially measles, rubella, and scarlet fever.

It is suggested that, during epidemic prevalence of these diseases in the future, a careful history with regard to the administration of this drug or similar compounds would be of great assistance in differential diagnosis.

Reference is made to the acute reactions, accompanied by a rash, which may occur in patients previously sensitized to these drugs, and also to the harmful effects of actinotherapy in such cases.

I am indebted to Dr. G. W. Ronaldson, medical superintendent of the South-Eastern Hospital, for his helpful advice, and to Sir Frederick Menzies, medical officer of health to the County of London, for permission to publish this paper.

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The committee appointed to plan the distribution of the fund, amounting to 5,000,000 kronor (£258,000), which King Gustav V of Sweden received as an eightieth birthday gift from the Swedish people, and which at the King's directions was to be applied for the investigation and combating of disabling diseases—principally infantile paralysis and rheumatic ailments—has now submitted its proposals. It is proposed that the money be applied to three funds: a research fund of 2½ million kronor, an institute fund of 2 millions, and the remainder to constitute a reserve fund. Research into the origin and modes of development of the diseases in question is to be promoted above all, and the money should not be to any great extent used for treatment of sufferers.

A RARE TUMOUR OF THE TONGUE

A MANIFESTATION OF POST-KALA-AZAR DERMAL LEISHMANIASIS

BY

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(WITH SPECIAL PLATE)

Brahmachari (1922) reported a case with nodular skin lesions simulating leprosy as a sequel of kala-azar. He demonstrated *Leishmania donovani* both in direct smears and in culture, and described the condition as "dermal leishmanoid." Acton and Napier (1927) preferred the term "post-kala-azar dermal leishmaniasis," which, though somewhat unwieldy, is self-explanatory; nevertheless it is often referred to in the literature and in general practice as "dermal leishmaniasis." They described three distinct clinical types: an early depigmented stage; a later nodular stage; and a xanthoma type. Brahmachari and Banerjee (1928) described another type in which the disease showed itself in the form of erythematous patches with nodules before the appearance of depigmentation. Napier and Das Gupta (1930) in their extensive study of this condition recognized the following clinical types: depigmented areas, erythema rash, nodules, verrucose type, papillomatous type, hypertrophic type, and xanthoma type. In the hypertrophic lesion they demonstrated *Leishmania donovani* in the smears obtained from the scrapings of mucous membrane inside the lip and nose, where it was continuous with the skin. Subsequently, in their further clinical observations, Napier and Das Gupta (1934) described four more clinical types in addition to those mentioned before: mucous membrane lesion (on the palate, etc.); small ulcerated lesion; extensive erythema; and perionychial induration. Smith and Halder (1935) added three more types—namely, fibroid, leprous, and ulcerative; the latter two were really variants of the nodular type.

Though the typical lesions are so characteristic and variable as to be bewildering, I do not think we have as yet reached the journey's end. The greater our experience of the condition the more numerous the clinical types become. During the last four years I have made or collected notes on eleven cases of post-kala-azar dermal leishmaniasis; these eleven cases include a new type—nodular swelling of the tongue as a rare manifestation.

Case Report

A Mohammedan man aged 30, who was a local deck-hand by occupation, sought advice for nodular swellings in the tongue, and was admitted into the Patna Medical College Hospital on April 26, 1938. The nodules appeared in the tongue about four months earlier. He gave a history of suffering from a long-continued fever about two years previously, with enlargement of the spleen and liver, lasting for nearly three months, and was treated with a few injections of neostibosan. He stopped the injections as soon as the temperature came down and the general condition improved. The total quantity of neostibosan injected was approximately 1 gramme. About six months before admission he noticed a few small nodules appearing first on the face. Two months later he felt a sense of heaviness in the movement of the tongue, along with a slight swelling which appeared on the left side of the dorsum (of the tongue) close to the medial line. The lingual nodules (see Plate) were rather big and close together; they were painless and soft, had no ulceration on the surface, and showed

no change in colour. A few depigmented spots were seen on the face, neck, and upper part of the chest, and the nose and lips showed hypertrophic lesions. His general health was good and there was no enlargement of the spleen or liver. The history and presence of typical lesions in other parts of the body gave a clue to the diagnosis of post-kala-azar dermal leismaniasis, with an unusual manifestation in the tongue.

Microscopical examination of the smears from the nodules of the tongue revealed a few *Leishmania donovani* after a prolonged search, but those from the face showed many. No lepra bacilli were found from these scrapings or the nasal smears. The blood Wassermann reaction was negative. A blood count showed: erythrocytes, 4,130,000 per c.mm.; haemoglobin, 70 per cent.; leucocytes, 5,450 per c.mm.—polymorphs 50 per cent.; large monocytes 4 per cent.; lymphocytes 39 per cent.; and eosinophils 7 per cent.

The patient was given 0.2 gramme of neostibosan intravenously thrice a week for twelve consecutive weeks, and a quinine iron-arsenic mixture was given orally. The tongue lesion took about four months to disappear along with pronounced amelioration of the lesions in other parts of the body.

Discussion

I had been expecting the tongue to show some manifestations, as both the skin and tongue were ectodermal in origin and more or less subjects of the same maladies. So far as I can gather, two cases with lesions of the tongue have been reported, though various authors have described from time to time the lesions of the mucous membrane of the lip, cheek, and palate caused by *Leishmania donovani*.

Smith and Halder (1935), in their clinical studies of the disease, described for the first time two shallow ulcers on the dorsum of the tongue in a case of post-kala-azar dermal leishmaniasis; it is doubtful if they were due to leishmania, as parasites could not be demonstrated in the smears, and the ulcers also healed spontaneously without antimony treatment. Panja (1938) described nodular lesions in the tongue of a case and demonstrated leishmania in the smears. The case was treated with injections of solusalvarsan and neostibosan, and internal administration of Lugol's iodine. The tongue lesions disappeared after three and a half months. It is not clear if the lesions were due to treponema infection, as a Wassermann test of the blood was not done, and the improvement followed the administration of arsenic and iodine.

In the present case typical lesions in other parts of the body—namely, sharply defined depigmented areas and nodules on the face—led to the diagnosis that the tongue lesion was a rare manifestation of post-kala-azar dermal leishmaniasis, which was subsequently confirmed by laboratory findings. Pigmentary disturbance in the tongue was notably absent, unlike the condition of the skin in dermal leishmaniasis.

Such cases as the present one very rarely come under observation. Generally speaking, since the tertiary manifestation of syphilis in the tongue often appears first near the middle of the dorsum, this case might have been mistaken for syphilis had the other parts of the body not been carefully examined. In the absence of a positive Wassermann reaction one would have been justified in thinking it a carcinomatous condition, pending the microsection. The successful result of antimony treatment proved it to be otherwise.

The object of publishing this note on post-kala-azar dermal leishmaniasis is to invite the attention of general practitioners in the Tropics to protean manifestations of the disease, and especially to the possibility of missing a tongue lesion such as this.

My thanks are due to Lieutenant-Colonel A. N. Bose and Dr. A. K. Guha for the laboratory examinations, and to my house-physician, Dr. A. Ganguli, for the case notes.

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DUODENAL ULCERATION IN THE NEWBORN

BY

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(WITH SPECIAL PLATE)

Peptic ulceration in adults is so common nowadays that little significance is attached to its occurrence. It is not, however, generally realized that such ulceration is found occasionally in the neo-natal period, and that, indeed, it may give rise to serious consequences. Melaena and haematemesis are often seen in the newborn, but the possibility that the causative factor might be the actual ulceration of the alimentary tract is rarely considered. Accordingly, a fully investigated case of duodenal ulceration in a three-day-old child is, we consider, worth putting on record.

Case History

A full-time female baby was born in the Western General Hospital, Edinburgh, on October 2, 1938, at 8.45 a.m. The mother was a healthy woman aged 29 who already had one child. Pregnancy, labour, and the puerperium were normal in all respects, and the child at birth weighed 6 lb. 9 oz. During the first forty-eight hours the child's condition was very satisfactory, but at 6 p.m. on October 4 it began to vomit. At first the vomit was small in amount and consisted mostly of mucus streaked with coffee-ground material which gave a positive guaiac reaction. Chloral was administered, and the child was allowed to remain at rest in its cot. Maternal blood was given intramuscularly, but the vomiting continued and at 9 p.m. was accompanied by melaena. Paternal blood and, later, 2 c.cm. of haemostatic serum (Parke, Davis) were administered, but in spite of these the haematemesis and melaena persisted, and the child died at 10 a.m. on October 5.

ABSTRACT FROM THE POST-MORTEM RECORD

Alimentary System.—A little blood was present in the stomach, and all the contents of the alimentary tract from the duodenum downwards were blood-stained. There were two small "kissing" ulcers in the duodenum within half an inch of the pylorus. The ulcer on the posterior wall had a small bleeding point in its base that had apparently given rise to the bulk of the blood in the intestine. Examination of the wall of the descending colon revealed considerable congestion, and apparently there had been a slight capillary ooze from that part. No actual ulceration was found in the alimentary tract below the duodenum.

Serous Sacs.—The peritoneal cavity and the other serous sacs were normal.

Respiratory System.—No abnormality was detected apart from a small quantity of aspirated blood in both lungs.

Cranium and Contents.—The skull was normal. The brain was examined with a view to determining the presence of any pathological change in the hypothalamic region that might have been associated with the ulcer, but no lesion could be demonstrated.

No abnormality was detected in the other organs of the body.

Microscopical Examination.—Necrosis of the whole of the mucosa in the area of the ulcer on the posterior wall was revealed (Plate, Fig. 2). This necrosis involved the muscularis mucosae and the submucosa in places. Two arteries were present in the floor of the ulcer. The first of these showed considerable destruction of its wall, and on making serial sections a point of complete rupture could be seen (Fig. 1). It was apparent that this artery provided the bleeding point detected on macroscopic examination. The lumen was occupied by a hyalinized thrombus. The second artery also exhibited necrosis of the part of its wall adjacent to the duodenum. There had been considerable digestion of the wall in this situation, but no actual complete rupture could be seen (Fig. 3). This change was similar to that seen in acute peptic ulcer in the adult. Microscopical examination of the other organs revealed nothing of pathological interest apart from aspirated blood in the lung.

Duodenal ulceration in the newborn has been noted on many occasions. So far as can be determined, Spiegelberg (1869) was the first to record such a case. More recently several articles have appeared in which the pathogenesis has been fully discussed (Holt, 1913; Craig, 1934). Various theories have been advanced by these and other workers as to the aetiological factors that might form the bases of duodenal ulceration in the newborn. These include the association of the ulceration with suprarenal haemorrhage, or asphyxia, or trauma in the child; and with eclampsia or a febrile state in the mother. None of these features was present in the above case. It has also been advanced that such ulceration might arise as a consequence of emboli displaced from a compressed umbilical vein. No evidence of infarctions, however, was detected in the other organs of the body, as might be reasonably expected if emboli arose from such a source.

The literature on this subject has been fully reviewed by Holt (1913) and Craig (1934).

We are indebted to Professor R. W. Johnstone for permission to record this case, and to Professor A. M. Drennan for his helpful criticism.

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The report for 1938 of the Central Mining—Rand Mines Group—Health Department deals with the health of more than 100,000 native labourers employed in fifteen gold mines and one colliery. There was some rise in the morbidity rate during the year, largely accounted for by measles, mumps, and chicken-pox. Fears had been expressed in some quarters lest natives introduced from previously prohibited areas should succumb to the changes of climate and environment, but happily this has not been the case. The incidence rate for enteric fever reached the record low level of 0.73 per 1,000. In all the mines of this group those handling food are inoculated with Grasset's "endotoxoid" vaccine; in certain of the mines all the recruits are also inoculated. With regard to malignant disease, the report states that carcinoma and sarcoma, though by no means rare among natives, are less common than they are in a European population. During the year there were seventeen cases, of which fifteen were carcinoma of the liver. It is pointed out that the figures in the report, dealing with a specially selected population of male natives aged from 20 to 40, must not be taken as an index to incidence among the Bantu people in general.

Clinical Memoranda

Congenital Absence of the Ribs

(WITH SPECIAL PLATE)

Congenital absence of the ribs is a fairly uncommon abnormality, but, so far as I could ascertain from the literature which was kindly supplied to me by the British Medical Association Library, this case seems to differ from the usual rib deformities in that there is no abnormality of the shoulder girdle or the upper ribs. As can be seen from the radiograph (see Plate), permission to publish which has kindly been given by Dr. N. Crowe, the fifth to the ninth ribs are absent, though there is a rudimentary eighth. The radiograph also shows that the ninth and tenth ribs are expanded, and that in addition half of the seventh dorsal vertebra is absent on the left side and there is some scoliosis to the left.

The child, a girl, was born naturally on June 2, 1937, after a normal pregnancy, and the deformity was instantly apparent, as the left chest moved in and out with respiration, rather like the bag of a Boyles apparatus. The child wore a tight binder until she was old enough to wear a well-boned corset, which replaces the absent ribs. She enjoys good health, and seems to suffer no inconvenience from her deformity. She survived, when 6 months old, a severe attack of whooping-cough, with a great deal of bronchitis and a possible patch of bronchopneumonia, though a considerable degree of cyanosis was noticed during this illness. It is presumed that this was due to deficient expansion of the left lung, the lung being partly out of action, as cyanosis has not been observed since.

Worcester. W. D. STEEL, M.B., M.R.C.S.

Double Decapsulation of the Kidneys for Albuminuria and Oedema: Complete Recovery

Reports of renal decapsulation for oedema in nephritis have appeared in publications ever since Harrison's first three cases in 1896. Among other contributors on this subject have been Edebohls (1904), Tyson (1911), Koplik (1911), Horder (1920), Boyd (1921), Kidd (1921), and Campbell (1930) (twenty-three cases).

The case here reported ended in complete recovery after gross albuminuria and general oedema lasting three months.

CASE REPORT

A married woman aged 38 had scarlet fever in 1934, and after recovery she had occasional pain in the lumbar area. There is no record of any examination of the urine following her recovery from scarlet fever. On January 18, 1938, she complained of swollen feet, felt tired, but had no headache. On January 26 she looked tired and pale. There was soft oedema of the feet and in the lumbar area. Her tongue was clean and her throat normal. She had false teeth.

The pulse was regular 72 and the vessels soft. Blood pressure was 128/80. Her heart was normal in size. There were no added sounds, and the electrocardiogram was normal. The lungs were clear, and the abdomen, central nervous system, and fundi were normal. A Wassermann test was negative. A blood count gave: haemoglobin, 98 per cent.; red cells, 5,170,000 per c.mm.; colour index, 0.9; white cells, 14,600 per c.mm.—polymorphs 66 per cent., eosinophils 1 per cent., monocytes 2 per cent., lymphocytes 31 per cent.

Examination of the urine resulted as follows. Specific gravity 1020, acid; albumin +++, 5 grammes per litre of urine, Esbach. No sugar. Deposit *nil*. The protein was

albumin. Volume in twenty-four hours, two pints. Blood urea 36.3 mg. per 100 c.cm. Urea clearance test for renal efficiency: blood urea 47.5 mg. per 100 c.cm. Specimen 1: 2.4 c.cm. per minute; volume, 190 c.cm.; urea, 2.08 per cent. Specimen 2: 6.2 c.cm. per minute; volume, 240 c.cm.; urea, 2.11 per cent. Clearance 1, 69.2 per cent.; Clearance 2, 69.2 per cent.; average 69.2 per cent. The blood chlorides amounted to 495 mg. per 100 c.cm.; the blood cholesterol to 122.8 mg. per 100 c.cm.

The following treatments were adopted in turn: low protein diet; salt-free diet; full protein diet; extra salt. Salyrgan injections 1 c.cm. every other day, combined with ammonium chloride, 30 grains t.d.s. orally. Hot-air baths. Diuretin, 10 grains t.d.s. Pituitary extract, 2 grains, with thyroid sic. (1932), ½ grain t.d.s. Ephedrine hydrochloride, ½ grain t.d.s. Ephedrine hydrochloride, ½ grain in 1 c.cm. saline, given hypodermically every six hours.

The blood pressure remained at 90/65, and no improvement was made by any of the treatments. The albumin varied between 10 grammes and 1 gramme per litre of urine. The urine showed occasional hyaline casts. The oedema varied, being mostly in the legs and lumbar area, and often on the dorsal surfaces of the hands, with occasional ballooning of the eyelids.

On April 5, as there was no improvement, I asked Mr. S. N. Lytle to investigate the case with a view to considering decapsulation of the kidneys. Cystoscopy and catheterization of the ureters were done. The bladder was normal, and the kidney specimens showed a marked amount of albumin on both sides and the presence of numerous hyaline casts in the urine from the left kidney. On April 15, under general anaesthesia (open ether), a one-stage bilateral decapsulation of the kidneys was carried out. At the operation some oedema of the abdominal wall and perinephric tissues was observed. The capsules on both sides stripped easily, and it was thought that a moderate amount of swelling of both kidneys was present. No other abnormality was noticed during the operation.

Post-operative Condition.—The patient made an uninterrupted recovery. The albumin varied between 5½ and 2 grammes per litre of urine. The oedema gradually began to disappear. On May 17 all oedema had gone. On July 1 she left the ward, having been kept in especially to see if the blood pressure could be raised by a further course of ephedrine hydrochloride, posterior pituitary extract, and whole-gland pituitary, but this was of no avail, the blood pressure remaining at 90/65.

On leaving she felt very well, and there was only a trace of albumin present. Since then she has had no albumin or oedema. Report on November 1: She still feels well, but is thin and somewhat pale. There is no oedema. Blood pressure 115/80. The urine has a specific gravity of 1018; there is no albumin, blood, or casts. The blood urea amounts to 32.8 mg. per 100 c.cm. blood. A urea concentration test after 15 grammes of urea showed: Specimen 1—volume 350 c.cm.; urea 0.67 per cent. Specimen 2—volume 100 c.cm.; urea 1.49 per cent. Urea clearance, second hour, 60.5 per cent. A blood count showed: haemoglobin, 85 per cent.; red cells, 4,550,000 per c.mm.; colour index, 0.9; white cells, 6,600 per c.mm. Since then the urine has been examined on several occasions, and has been found satisfactory.

I am indebted to Dr. Gleave for the pathological investigations in this case.

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Reviews

MEDICAL TREATMENT

Textbook of Medical Treatment. By Various Authors. Edited by D. M. Dunlop, M.D., F.R.C.P.Ed.; L. S. P. Davidson, M.D., F.R.C.P.Ed.; J. W. McNee, D.Sc., M.D., F.R.C.P. Foreword by A. J. Clark, M.D., F.R.C.P., F.R.S. (Pp. 1,127; 27 figures; 4 tables; 7 plates; 8 charts. 25s. net, postage 7d.) Edinburgh: E. and S. Livingstone. 1939.

Scotland has a great tradition of clinical teaching, which is well maintained in the *Textbook of Medical Treatment*, edited by Professors Dunlop, Davidson, and McNee. But while there should be a tradition of teaching, they emphasize that teaching should not be merely traditional. Treatment, although of such importance in practice, often receives scant attention in textbooks of medicine; sometimes only the vaguest indications are given, and frequently methods are simply copied from one book to another long after they have become obsolete. In this book much dead wood has been remorselessly cut away and great attention paid to really practical issues. Although it is still true that the first thing in treatment is diagnosis, it is not true that this also constitutes the second and third, as used to be asserted. The second is the general management of the patient so as to put him under the most favourable conditions to respond to the third—the administration of drugs of proved efficacy.

A lucid and helpful foreword is contributed by Professor A. J. Clark; his services to pharmacology and therapeutics are well known, not the least of them being the fearless exposures of false claims that he has made from time to time. He points out that the study of pathology and bacteriology did for awhile divert so much attention from therapeutics that at the beginning of this century many physicians were sceptical of the value of almost all drugs. The possibilities foreshadowed in the discovery of diphtheria antitoxin and thyroid extract were not realized, and it was Ehrlich's work in 1910 which provided dramatic proof that a new era in therapeutics had dawned, when he combined chemical and pharmacological methods in a systematic search for new therapeutic agents. The evidence from hormones and vitamins, that the body itself prepared powerful agents and acquired others in the food consumed, dealt a blow at the nihilism which refused to believe that it could be influenced by chemical means. Meanwhile chemotherapy and the preparation of synthetic drugs proceeded apace. The common characteristic of all such drugs is that they are sharp-edged tools, the incorrect use of which is highly dangerous. They call for much greater skill than does elegant polypharmacy. The recognition of vitamins has naturally given impetus to the study of dietetics, while psychotherapy has taught us the importance of the adjustment of the individual to his social environment. All these aspects of therapeutics are fully surveyed in this book.

The text is from the pens of twenty-seven teachers in Scottish universities, sixteen hailing from Edinburgh, eight from Glasgow, and three from Aberdeen. In addition to these, Dr. Ferguson, deputy chief medical officer in the Department of Health for Scotland, deals with the increasingly important subject of industrial diseases. It is gratifying to find the younger generation of teachers so well represented in this list. As a good example of the methods of the book the article on tuberculosis by Professor Dunlop and Mr. Dick may be instanced. Though

full of information, this is not so condensed as to constitute an uninteresting catalogue only suitable for reference; it is interestingly written and will encourage the student to think for himself and to form his own judgment. It is also evidence of the great advance in the treatment of tuberculosis during the present century. Indeed, the reviewer was accustomed to say, while still a medical student, that the ordinary out-patient treatment of pulmonary tuberculosis then in vogue would horrify the next generation. To-day the crowding together on benches of cases of open tuberculosis, scattering infection as they coughed, merely to receive after a long wait cod-liver oil and some linctus is no longer thinkable.

The section on nephritis (Dr. J. D. S. Cameron and Dr. J. N. Cruickshank) opens with the wise observation that although the classification of this condition has been obscured by the over-elaboration and subdivision of most workers, the treatment fortunately remains fairly clear. For this relief the student may give much thanks, especially as the authors proceed to exemplify it. Professor Stanley Davidson's work on blood diseases is well known, and in conjunction with Dr. H. W. Fullerton this is incorporated in a clear account of the treatment of the anaemias. In the article on chronic rheumatic diseases (in collaboration with Dr. J. J. R. Duthie) he emphasizes with his accustomed vigour the magnitude of the problem, the enormous economic loss involved, and the vast amount of pain and misery entailed. Professor McNee deals with diseases of the liver and its annexes—a subject on which he is a recognized authority—and is also responsible with Dr. David Smith for the section on diseases of the alimentary canal, which is full of valuable information, steering a middle course between undue dogmatism and a confusing eclecticism. In the article on diseases of the heart Dr. A. R. Gilchrist and Dr. I. G. W. Hill have an interesting discussion on the treatment of heart failure and of the senile heart—the latter topic being an appropriate contribution from the Edinburgh school, since it was Dr. George Balfour who first gave an admirable account of it.

Clearly it is impossible to refer specifically to all the articles, but we must mention the interesting and valuable one on psychotherapy in general practice by Dr. D. R. MacCalman of Aberdeen University, which gives the practitioner just the kind of guidance he needs. The contributors can be cordially congratulated on the accomplishment of an excellent piece of work which will redound to the credit of the teachers of the Scottish medical schools.

W. LANGDON-BROWN.

RADIODIAGNOSIS AND RADIOTHERAPY

The 1938 Year Book of Radiology. Diagnosis, edited by Charles A. Waters, M.D.; Therapeutics, edited by Ira I. Kaplan, B.Sc., M.D. (Pp. 512; 511 figures. 4.50 dollars; 19s., postage 7d.) Chicago: Year Book Publishers; London: H. K. Lewis. 1939.

This year-book maintains the high standard of the series, which was first produced in 1932. The latest volume follows on familiar lines, being divided into two parts—the first radiodiagnosis and the second therapeutics. Part I deals with radiological technique and the radiological investigation of the various systems of the body. There is little new to be recorded in technique, but a good description is given of the laminagraph and its variations: the improved apparatus used by Sherwood Moore is said to be the most notable advance in this direction. There are interesting studies of the cranial changes in pituitary dysplasias, and in the chapter dealing with the respiratory system special reference is made to the effect of microfungi inhaled by workers with hay, grain, manure, and soil. The value of serioscopy as an improved method of localizing intrathoracic lesions is stressed by several authors. Attention is drawn to a paper by A. Tudor Edwards and A. Bryan Taylor in which four cases of vascular endothelioma of the lung are described. It is stated that search of the literature fails to reveal any exactly comparable cases. The tumours were well defined and discrete, with some encapsulation. They are said to be, if malignant, of a low-grade type, causing symptoms only through their slow growth and mechanical effect. All were treated radically by lobectomy.

Part II is mainly radiotherapeutics, but there are many references to papers dealing with cancer, such as Mendeléeff's test for cancer, the aetiology of cancer in the light of present knowledge, and the relation of heredity to the occurrence of cancer. These are, however, valuable and of interest to the radiologist. A short chapter on radiation physics contains extracts from the more important recent publications. There is a brief reference to the cyclotron and the biological action of neutrons. Extracts from papers on radiation injuries are given, and in view of the present trend in *x*-ray treatment towards heavy doses and to treatment of large areas of the body it is most important that these should be borne in mind by the radiologist. The *Year Book of Radiology* enables the busy practitioner to keep in touch with nearly all the recent advances, and although there are some omissions the material has been carefully chosen and accurately abstracted. Numerous illustrations of fine quality are included, and the style of the book is all one could wish for—good paper, clear print, handy size.

A short account of the life of Roentgen as revealed in his letters makes an interesting opening chapter, and an adequate index completes a work that will be appreciated by all radiologists.

NEUROLOGY AND ENDOCRINOLOGY

The 1938 Year Book of Neurology, Psychiatry and Endocrinology. Neurology, edited by Hans H. Reese, M.D.; Psychiatry, edited by Harry A. Paskind, M.D., Ph.D.; Endocrinology, edited by Elmer L. Sevringhaus, M.D. (Pp. 776; 131 figures. 3 dollars; 12s. 6d., postage 6d.) Chicago: Year Book Publishers; London: H. K. Lewis. 1939.

The 1938 *Year Book of Neurology, Psychiatry and Endocrinology* lives up to the reputation of its predecessors. The editor of the neurological section, Dr. Reese, admits to some disappointment that the clinical applications do not keep pace with the advance in anatomical knowledge of the central nervous system. The recognition of clinical effects from protrusion of intervertebral disks is interesting, and we should not be surprised to see this annexed by the unorthodox! There is a study of the disturbances of water metabolism in two patients with the Laurence-Moon-Biedl syndrome, which is of special interest now that it is becoming realized that an altered water balance may sometimes account for otherwise intractable cases of obesity.

Practically the whole section on endocrinology bears the subheading "pituitary group"; indeed, this is made to include everything except the pineal, thymus, and antihormones. Admitting that the pituitary is the master gland, this method of classification does not make for clarity. The claim that Simmonds's disease can be cured by psychotherapy shows how persistently anorexia nervosa is mistaken for it in certain quarters, where the classical work of Gull and other English observers seems to be completely disregarded.

TROPICAL MEDICINE

Tropical Medicine. By Sir Leonard Rogers, K.C.S.I., C.I.E., LL.D., M.D., F.R.C.P., F.R.C.S., F.R.S., and Sir John W. D. Megaw, K.C.I.E., M.B., D.Sc. Third edition. (Pp. 544; 2 coloured plates; 87 figures. 16s.) London: J. and A. Churchill. 1939.

Though there are a number of well-known textbooks on tropical medicine there is no other exactly like this one, which was written expressly for the student and busy practitioner, who are more concerned with diagnosis and treatment than with many of the intricacies of applied laboratory methods and parasitology. It is not intended to imply that these aspects of the subject are ignored, but only sufficient information is given to allow of a satisfactory comprehension, both practical and theoretical, of the aetiology and transmission of each disease and of the principal prophylactic and preventive measures. That such a book should have reached a third edition so soon after the publication of the first in 1930 speaks for itself and justifies the joint authors' contention that there was need for a book which was mainly clinical in its outlook.

In this new edition the size of the book, now familiar to readers, does not appear to have changed at all, though much new information which has come to light since the issue of the second edition in 1935 has been incorporated. This is particularly noticeable in the sections devoted to disease due to defective diets, yellow fever, typhus, cholera, malaria, schistosomiasis, and leprosy. As was to be expected during this period of intensive chemotherapeutic investigation, when new drugs may be said to be appearing almost daily, carefully selected reference has been made to the value of certain of these which have given good results in the treatment of tropical diseases—as, for instance, the use of sulphonamide in undulant fever, of solustibosan in kala-azar, of nicotinic acid in pellagra. It is evident that the authors have kept a careful watch on the literature, and it can safely be stated that this new edition has been brought thoroughly up to date. Students of tropical medicine and practitioners in hot countries can do no better than accept it as a reliable guide and follow the instructions it gives for dealing with the diseases which are likely to be encountered in tropical climates.

INFECTIOUS FEVERS

Essentials of Fevers. By Gerald E. Breen, M.D., Ch.B., D.P.H., D.O.M.S. (Pp. 274; 24 figures. 7s. 6d. net.) Edinburgh: E. and S. Livingstone. 1939.

Dr. Gerald Breen's little work contains in fewer than 300 pages a good deal of useful and up-to-date information, for the most part of an elementary character suitable for the student and young practitioner, as the author has intended. In addition to diphtheria, the acute exanthemata, enteric fever and other intestinal infections, mumps, and the acute infections of the nervous system, the work contains chapters dealing with the general features of infection, elementary epidemiology, the examination and treatment of fever patients, and miscellaneous subjects such as infectious disease and the law, mechanical artificial respiration, and some common mistakes, together with a table of incubation and segregation periods and typical charts.

We have noticed a number of omissions, of which the most important is the absence of a chapter on typhus fever, while minor defects are the absence of any mention of the fourth disease, erythema infectiosum, exanthema subitum, or the occurrence of surgical emphysema in tracheotomy. On page 266 the incubation period for scarlet fever is stated to be two to four days, whereas it would be more true to say that it ranges from a few hours to a week, and the segregation period is given as "until all discharges ceased," whereas it is only a minority of scarlet fever patients who have any discharges at all. The segregation period of chicken-pox is given as "until all crusts separated," whereas there is a growing tendency now to release the patient on the tenth or eleventh day of disease regardless of the presence of scabs. As regards the illustrations with which the book is freely interspersed it is unfortunate that in the photograph chosen as the frontispiece the distal extremities are not represented.

Apparently Dr. Breen does not regard the geographical distribution, the literature, or the historical aspects as among the essentials of fever, since they find no place in his book. The work as a whole is to be recommended as being of a thoroughly practical character and written in a lively and dogmatic manner, which will doubtless attract a large number of readers.

STERNAL PUNCTURE

La Ponction Sternale: Procédé de Diagnostic Cytologique. By P. Émile-Weil and Suzanne Perlès. (Pp. 184; 25 figures. 75 fr.) Paris: Masson et Cie. 1938.

Now that sternal puncture has become almost a routine procedure in the diagnosis of blood diseases haematologists will be grateful to the authors, P. Émile-Weil and Suzanne Perlès, for this useful and necessary guide to the interpretation of bone marrow cytology and for establishing a normal "myélogramme." The conception of the book arose after a previous study of the cytology of the spleen from which had been obtained a "splenogram"—a standard cytological normal, analogous to the normal "blood picture."

A short account is given of the method adopted; the site of election and precautions to be taken; anaesthesia; the making of films from the contents of the syringe, and the staining of films by May-Grünewald-Giemsa. In all cases of anaemia, and to determine the percentage of granular blood cells, vital staining by cresyl-blue is employed. The cells of the bone marrow are granulocytes and erythroblasts; the usual reaction of the marrow is myelo-erythroblastic; there is also normally a percentage of lymphoids and monocytes. The embryonic cell types are described in detail and accompanied by most beautiful coloured representations. The typical average formula of the cells of normal sternal puncture is given, which comprises eighteen separate classes of cells. In the second part of the book the pathological myélogrammes for various haematological diseases are described.

This is a well-arranged book and is thoroughly to be recommended to those who use sternal puncture for diagnosis.

Notes on Books

Dr. F. M. PURCELL of the Colonial Medical Service, in a small, well-illustrated book, *Diet and Ill-health in the Forest Country of the Gold Coast* (H. K. Lewis, 7s. 6d.), gives an account of the diseases prevalent in infancy and early childhood in the forest country of the Gold Coast, which he considers are directly associated with the use of ill-balanced or defective diets. Many of these maladies will appear strange to doctors practising in this country, but the figures illustrating them will show the extent of which dietetic malnutrition, combined with infections prevalent in the Tropics, can disfigure and corrupt the human body. So complex and varied are the symptoms and signs of these maladies that in many cases it is very difficult to arrive at a simple diagnosis. But the naming

of a malady is of less importance than the recognition of the part which malnutrition plays in causing it. How important this part is in the territory where Dr. Purcell's work lay is evident from the experiences his book records. His purpose in writing it has been "to stress the need for better *integration* [the italics are his] in the study of disease for approach to the problems of ill-health with a wider vision." The experiences he has recorded will contribute to that end.

Gould's *Pocket Pronouncing Medical Dictionary*, revised by Mr. C. V. BROWNLOW (London: H. K. Lewis, 10s. 6d. net; with thumb-index, 12s. 6d. net), is now issued in its eleventh edition. A number of new words are included, and its sphere of usefulness is enlarged by the addition of tables of prefixes and suffixes, and of phobias. To render the dictionary easier of reference tables which in earlier editions broke up the continuity of the vocabulary are now placed in alphabetical order in the appendix. This compact little dictionary of some 40,000 words will be found useful by those who need to have ready access to anything except the remotest of medical information.

The life story of *Dr. Harry Wyatt of Shansi* has been ably and interestingly written by ERNEST A. PAYNE, editorial secretary of the Baptist Missionary Society, and will be treasured by Dr. Wyatt's many friends in Edinburgh and China, where his missionary work was carried on from 1895 to 1938, covering many periods of grave internal strife and, finally, the early part of the war against Japan. The tale of the Bridgwater boy growing up to become a capable orderly in the European world war as well as a distinguished medical student culminates in a life of heroism and self-sacrifice in mission work in China, where Dr. Wyatt was accorded the well-deserved name of Huai An-Li, or "knight of peace and justice." The too short story contains many details of action, and affords a good description of medical missionary work with its incessant struggle to overcome almost unbearable difficulties while risking life daily, and reveals much of the character of the Chinese peasants which has won so much favour as well as criticism, as well as of the character of Dr. Wyatt as a pioneer in his own self-chosen sphere of service to humanity. The booklet is published at 1s. by the Carey Press.

Chemie und Physiologie des Eiweisses is published at Dresden and Leipzig by Theodor Steinkopff, price RM. 6.75. The third Frankfort Conference on Medical Science in 1938 was devoted to the study of the chemistry and physiology of proteins. The report of the proceedings provides a good summary of recent advances in this important subject. The subject that attracted most attention was that of "active proteins." Professor Dirscherl discussed the structure of the proteohormones, Dr. Wagner Jauregg the protein nature of enzymes, while Professor Laubenheimer and others discussed the structure of antibodies. Professor Gremels put forward the interesting hypothesis that hormones such as acetylcholine and adrenaline produce their actions after fixation by specific proteins and thus play the part of prosthetic groups. This hypothesis helps to explain the specific nature of the action of drugs of this class. Professor Bennhold showed that the transport of many substances in the blood could most easily be understood if they were regarded as forming loose combinations with the blood proteins.

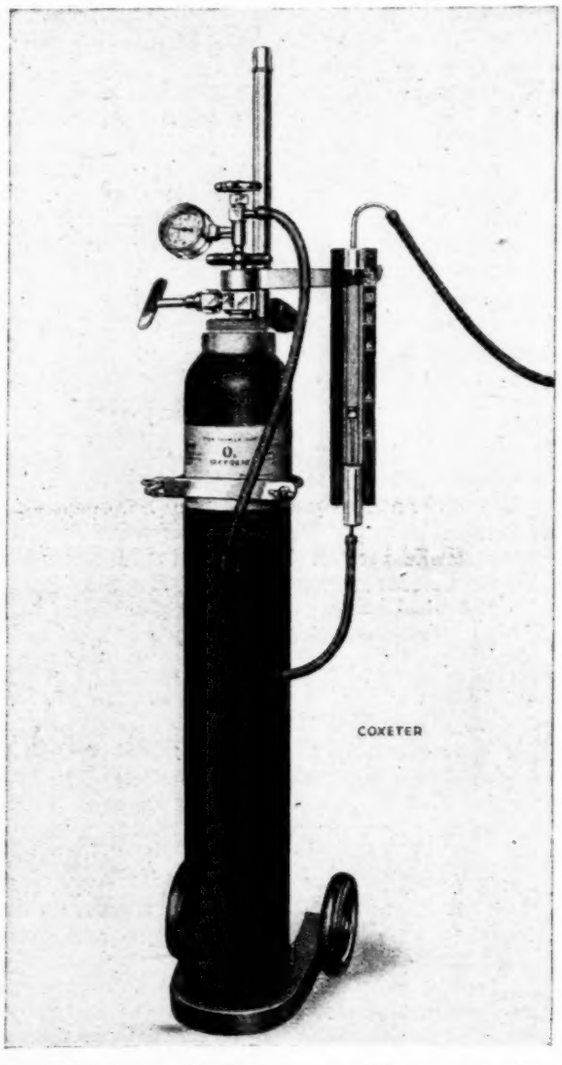
After a lapse of ten years I. F. and W. D. Henderson's *Dictionary of Scientific Terms* (Edinburgh and London: Oliver and Boyd, 16s.) appears in a third edition, revised by Mr. J. H. KENNETH. Of about the same size as its predecessor, containing some 10,000 definitions of terms dealing with biology, botany, zoology, physiology, and anatomy, it has been modernized by new items and by fresh meanings that are now applied to some of the older words. A list of abbreviations in common use in biological literature is also added. Though not, of course, comprehensive, this handy dictionary contains much information which students of biological sciences may find of practical service.

Preparations and Appliances

THE WARD FLOWMETER FOR OXYGEN

Dr. F. C. EVE, F.R.C.P., consulting physician, Royal Infirmary, Hull, writes:

The apparatus shown in the figure consists of twelve inches of very strong gauge-glass tubing containing a white bobbin which loosely fits the tube. A heavy watch-chain hangs from the bobbin so that the higher the bobbin is pushed up by the oxygen flowing past it the heavier is its load of chain pulling it down. The device prevents it sticking and gives a wide range of steady readings.



The flowmeter usually hangs on a gallows-arm readily detachable from the oxygen cylinder, but it can hang on a wall, cot, or tent. It contains no water to spill or evaporate, and as it needs no table it cannot be knocked over. Visibility by the nurse across the ward, simplicity, and low cost are its chief claims. The nurse can tell at a glance if the cylinder is failing to deliver oxygen in proper amount.

It is strongly made by Messrs. Coxeter and Son, Morden Factory Estate, Morden Road, S.W.19.

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THE GROWTH OF THE LABORATORY

The address by Sir F. Gowland Hopkins on the importance of laboratory effort in cancer research is in a sense a pendant to Sir Edward Mellanby's Stephen Paget Lecture[1] on the experimental method in the conquest of disease. Mellanby mentioned that the great standby of the antivivisectionist nowadays is the failure of the investigator to find a cure for cancer in spite of all the animals sacrificed to experiment, but Hopkins shows how much has been learnt. Not only can cancer be transmitted from one animal to another but it can be actually induced by various methods. Much is known about the intimate life of the cancer cell, its unusual sugar metabolism, and the abnormal configuration of its amino-acids, and there seems no reason to doubt that one day we shall be able to restore it to normal. Both lectures, therefore, are a plea for the experimental method, and in the study of cancer no other way seems to offer any great promise. The recent report of the Tata Memorial Trust[2] for the encouragement of research on leukaemia exemplifies this, inasmuch as the greater part of the funds are being expended on the study of experimental leukaemia in animals and practically none on clinical research in the narrower sense. These two addresses, and the lectures given by Simon Flexner[3] at the Nuffield Institute last year on the evolution and organization of the university clinic, all bear the same refrain of the importance of the laboratory and the experimental method. The days of the old hospitallers are gone, and those anxious to relieve human suffering to-day build a laboratory with an animal house, and regard clinical facilities almost as an afterthought, as we see from the account of the magnificent new Squibb Institute for Medical Research.[4] It may be true that experiment is idle unless it is inspired by observation. A gamekeeper seeing his ferrets die provides the essential clue for the investigation of distemper and influenza, and clinical observations on cancer of the scrotum and the lip are the starting-point for our present ability to induce cancer in the experimental animal. The fact remains that we are in the heyday of the laboratory and the experiment. Trotter,[5] in his fascinating address, "Has the Intellect a Function?" shows that it is the discovery of the experimental method and not any development of the faculty of reason which has led to the growth of the natural sciences. "If we were to allow the sceptical spirit full liberty for a moment, we might find ourselves wondering whether the vast mass of scientific knowledge has not in some queer way invented itself." It is no longer necessary to defend the experimental method; rather should we see that this tremendous development, with its tendency to accelerate, does not get out of control.

In the first place it may be doubted whether all medical problems are capable of being solved by the experimental method or by laboratory research, and whether the clinical researcher's proper place is the laboratory. The greater part of the physician's work is concerned with disorders which are psychogenic or psychosomatic in nature. He sees these disorders affected, often rather unaccountably, by prosperity or disaster, and he may well wonder whether it will not always be necessary to study them by observation rather than by experiment, and to relieve them by techniques more closely related to religion than to science. Many, too, may surmise, like the writers of the P E P report,[6] whether the main need nowadays is not for research in the field rather than in the laboratory, and the development of techniques for publishing and applying knowledge rather than acquiring more. Hopkins asserts that in growing science the law of diminished returns finds no application. It may be questioned whether this is true and whether, for example, the splitting of the vitamin B complex into its separate components is likely to have the same effect on nutrition as the primary discovery.

Hopkins touches on the important point of freedom for the research worker, and shows that it is impossible to predict the direction from which great advances may come. Many people's minds are exercised by the much greater danger that research may become a closed concern and that a hard-and-fast line may be drawn between the research worker and the teacher. It would be idle to pretend that this danger does not already exist in pathology, with the growth of large whole-time research institutes such as the Lister Institute and the Medical Research Council's institute at Hampstead. Moreover, it seems generally agreed that not only men engaged in clinical practice but also

[1] *British Medical Journal*, 1939, 1, 1296.
[2] Ibid., 1251.
[3] The Evolution and Organization of the University Clinic, Oxford, 1939.
[4] *The Field and the Work of the Squibb Institute for Medical Research*, 1938, vol. i, No. 1.
[5] *Lancet*, 1939, 1, 1419.
[6] *Report on the British Health Services*. P E P, 16, Queen Anne's Gate, London, S.W. (7s. 6d.)

those with no other duty than clinical teaching have insufficient time for advancing medicine by experiment, and clinical schools are growing up in Cambridge and in Oxford which have no contact with the undergraduate student of medicine. The gulf between the research laboratory and the lecture theatre or ward becomes continually more difficult to cross. Researchers are no longer bacteriologists and physiologists, but virus experts or biophysicists. Steps must be taken to encourage a flow in both directions between the teaching schools and the research institutes. "Sabbatical years" and exchange of positions should be commoner, and five or ten years in research should not mean that a man has lost his place on the ladder of academic progress. We believe that medical research must suffer if it is completely removed from the practice of medicine, like Antaeus in the grip of Hercules, no longer regaining strength from contact with the earth. Abraham Flexner[1] is right, up to a point, in defending the usefulness of useless knowledge, but Pasteur's fundamental discoveries were inspired by utilitarian purposes, not by idle curiosity, and the doctrine of experiment for experiment's sake is as false as art for art's sake. In most cases it is a mistake for the researcher to be completely cut off from teaching which would ensure his retaining a modicum of general knowledge of his subject and an escape from whole-time research when his productive years are over. And it must surely be wrong for students in this country to have no living contact with the men who are making the most important advances in their subject.

THE VOLUNTARY HOSPITAL SYSTEM

In the revised version of the B.M.A. Hospital Policy, published in last week's *Supplement* as an appendix to the Report of Council, the following generalizations appear: "The voluntary hospital system embodies a principle—that of voluntary service—which is deeply ingrained in the traditions of this country. In its atmosphere of freedom an efficient system of medical education has been developed, and medical research of the highest quality has been fostered. . . . Whatever the modifications in form that it may undergo to meet the changing circumstances of the times, the voluntary hospital is certain to play a large part in the hospital life of the country for many years to come." Let us consider briefly what has happened within the memory of a large number of members still in active practice.

At the end of Queen Victoria's reign nearly all the voluntary hospitals of this country were in fact, and often in name, charities for free treatment of "the sick poor." Pay-beds and almoners were almost unknown, contributory schemes undreamt of. Since then, and with growing rapidity during the past fifteen or twenty years, a silent revolution has occurred. To-day there are few voluntary hospitals of good repute that do not possess a well-staffed almoner's department; enormous sums are raised for them by public contributory schemes; many of them have wards or wings, or even large blocks, set apart for paying patients; and everyone in the general wards is asked to pay something towards the cost of his treatment according to his means, or is expected to have payment made for him by some person or organization or authority. Cases are now admitted solely on the ground of their medical needs, and poverty is no longer an essential condition: financial status merely determines how much, if anything, the patient pays. In short, the purely charitable element, once supreme, has fallen into the background. Meanwhile, another revolution, no less silent, has been going on in the hospital service provided by local authorities. Under the Local Government Act of 1929 the old Poor Law infirmaries passed out of the control of Boards of Guardians into that of the county and county borough councils, and everywhere we find new or enlarged and modernized council hospitals, well equipped and staffed by whole-time medical officers, fulfilling the obligation placed upon local authorities to find a bed for anyone who needs treatment in hospital. In these rate-maintained institutions, general as well as special, the patient contributes towards his keep and towards his medical and nursing care according to his income. Thus to-day both classes of hospital, the voluntary and the municipal or county, can and do admit patients of any and every class, who pay for treatment and maintenance up to the limit of their purse. The former institutions have abolished poverty as the test for admission and the latter have abolished destitution as the test. What, then, remains of the charitable aspect of the voluntary system, and wherein lies the difference between the two kinds of hospital service?

To such questions a reasoned answer will be found in the pamphlet published this week by the Royal Liverpool United Hospital,[1] of which we print a summary at page 31. The aim of the document is to stress the part played by the voluntary hospitals, especially the teaching hospitals, in the hospital service of this country and the necessity for their continuance as an integral part of such service. The idea has been maturing for nearly a year. In its final form, as written by Mr. A. V. J. Hinds, the statement gathers together many strands

[1] *Hospital Testament*. University Press of Liverpool: Hodder and Stoughton, Ltd., London. (6d.)

of thought, both lay and medical; and Lord Dawson contributes a short preface. We reach the core of the problem in the first two paragraphs. Though the spirit of benevolence is with us still, "at first sight it is not easy to justify the dependence on charity of so necessary a thing as hospital treatment." If the care of the sick is part of the collective obligation to maintain a healthy population, how can the continuance of the voluntary hospitals be defended, much less a programme of intensified activity? For the time being, it is true, no Government would advocate taking over the voluntary hospitals of Britain; but, in the long run, why not a State hospital service? To this direct question the Liverpool document gives the following reply: "The care of the sick must be a national concern. That is undeniable, and the establishment of the municipal hospitals throughout the country shows that the duty has been realized and is being discharged. The State has recognized its responsibility for the care of the sick, and through the local authorities it is performing its duty ever more efficiently. But the charitable public still has a responsibility of its own, the responsibility for maintaining alongside the State-controlled system an independent element which has a value peculiar to itself. What that value is can only be clearly understood when it is realized that the care of the sick is only one part of what a hospital service does for the community."

This line of thought is developed in subsequent chapters. Two of the main points brought out are that beyond the care of the individual sick the voluntary hospital service must, and does, provide the community with a trained medical profession, and that it is the most important of the sources of advancement in medical knowledge and practice. "It has therefore three functions: the curative, the educational, and the scientific, and it gives three types of service." While the system whereby the voluntary hospitals have performed these three functions has worked excellently in the past, there are many now who would condemn it as an anachronism. To this comes the rejoinder that "an institution is not effete because it is without logical justification, and indeed English social life is full of such inconsistencies." The voluntary hospitals must be kept alive because many of them are teaching hospitals and research centres; and this peculiar feature makes them "the best guarantee of an alert and enterprising medical profession," on which depend the efficiency of hospital treatment, the advance of medical science, and the maintenance of high standards throughout the medical services. In brief, the merit of the system is that it puts a premium on a desire for excellence for its own sake. The analogy of the university comes readily to hand, for this also is among the few institutions which, though performing essentially public services, are still in private hands, and with the same justification. The universities receive substantial grants-in-aid from the State, but in the management of their own affairs—that is, on the academic side—they remain wholly autonomous. State support for the voluntary hospitals might be welcomed provided this does not spell absolute control: "Broadly speaking, the State could, and should, be invited to become a subscriber to the voluntary hospitals."

The Liverpool "Hospital Testament," like the B.M.A. Hospital Policy, is confident that the voluntary hospital, changed and changing as it is, has a place in the future hospital service, side by side and linked up with the modern rate-maintained hospital which does such fine work. Despite the fact that the voluntary institutions have ceased to be the sole agency in the care of the sick in hospital, the appeal to charity is as strong as ever. "It remains a noble thing to share, and share with distinction, in the alleviation of suffering. There is, however, another inspiration, no less noble, which in a modern world may be perhaps even more attractive. It is the inspiration to preserve a socially valuable institution as part of our national life, an institution whose function is the safeguarding of the future of Medicine."

SURGERY OF THE GALL-BLADDER

Coinciding with Professor Grey-Turner's Lettsomian Lectures for 1939 there seems to have been a burst of interest in surgery of the gall-bladder. Reviewing their operative mortality in a series of over 500 cases, Brooks and Wyatt[1] in America found a figure of 2.5 per cent. for uncomplicated cases. Comparing this with earlier results, such as Mayo Robson's[2] 1.6 per cent. out of 281 cases, they conclude that the mortality rate depends more upon the skill of the surgeon than upon any special biochemical or laboratory assistance. Such figures, however, help us little in summing up the risks of any particular patient. Although the general physical condition is of great importance, it is upon the function of the liver that success may depend, and on this it is often difficult to form an opinion. The various forms of tests, notably the hippuric acid test of Quick, have fully confirmed not only the presence of liver damage in long-standing gall-bladder cases but the unquestioned benefit of glucose in treatment. Much experimental research, notably that of Mann and his associates at the Mayo Clinic, has shown the great reserve power of the liver and its power to maintain its functions even after much of its normal tissue has been destroyed. So deceptive may this be that pre-operative

[1] *Ann. Surg.*, 1939, **109**, 334.
[2] *Diseases of the Gall Bladder and Bile Ducts.* By Mayo Robson and J. F. Dobson. New York: William Wood and Co. 1904.

glucose therapy is always advisable even in apparently healthy individuals. Hepatectomy in animals leads to rapid hypoglycaemia, and it has been suggested that prolonged disease of the gall-bladder may produce sufficient damage to the hepatic parenchyma—hepatitis—to cause, at least in some patients, true spontaneous hypoglycaemia. Coller and Jackson,[3] for instance, recently recorded three patients suffering from chronic cholecystitis with gall-stones in whom hypoglycaemic attacks were much relieved by cholecystectomy. Though such cases must be rare they call attention to the importance of the associated hepatitis in gall-bladder disease and also at once to the connexion between liver and pancreas in the metabolism of sugar. Whatever the exact mechanism concerned, there is little doubt, as judged both clinically and by liver efficiency tests, that the post-operative depression of liver function can be largely prevented by the free pre-operative use of glucose. That this is mostly independent of the pancreas is shown by work which suggests that insulin with glucose is of little more value than glucose alone in increasing the glycogen of the liver. With skilled surgery and careful pre-operative measures, the emphasis has been more and more laid upon early operation in cases of gall-stones, before the dangers of chronic hepatitis or pancreatitis have developed, the latter being, of course, an especially grave complication. The after-results of surgical treatment in disease of the gall-bladder depend partly upon the type and duration of the disease before operation, but more particularly upon whether cholecystostomy or cholecystectomy is performed. Most statistics show that only about half the patients whose gall-bladders are merely drained and not removed are permanently relieved of symptoms, and Saint, in a follow-up of 359 patients, noted frequent recurrence as long as ten years or more after operation. Meyerl, Sandweiss, and Saltzstein[4] have recently confirmed this point, and only record 16 per cent. of their cholecystostomy patients as being relieved of colic and indigestion. But where the gall-bladder is removed the end-results as a whole are good, and these same authors, in a series of 136 patients followed up for an average of seven and a half years after operation, found that 83 per cent. of those having gall-stones were benefited. Cholecystectomy for non-calculous cholecystitis was, however, successful in only 41 per cent., the main causes of recurrent symptoms being persistent biliary infection or a wrong original diagnosis. Anxiety neurosis, spastic colon, and peptic ulcer were the three commonest conditions to be mistaken for disease of the gall-bladder. Such factors do not take into account all the causes of failure in gall-bladder surgery. Underlying factors in the gall-bladder disease may be constitutional or a systemic or general infection, and either may persist after operation. In a few instances spasm of the cystic duct based upon an instability of the nervous system (dyskinesia) is present, and in others an alimentary infection may be persistent. Rehfuss[5] has again brought forward evidence of antecedent infection, most frequently in the sinuses, throat, or bowel, as being an essential factor in inflammation of the gall-bladder. He has reproduced gall-bladder disease in animals by repeated injections of organisms from the human bowel, and has emphasized that such disease is of the chronic type and required injections often over many months. All this makes it still more important, before advising operation, to attend closely to the physical and emotional make-up, as well as to such matters as focal and systemic infection and previous evidence of liver disorder.

[3] *J. Amer. med. Ass.*, 1939, **112**, 128.
[4] *Amer. J. digest. Dis*, 1938, **5**, 667.
[5] Ibid., 571.

"NUTRITION AND THE PUBLIC HEALTH"

Under this title the proceedings of the recent Conference summoned under the auspices of the British Medical Association to consider the wider aspects of nutrition have now been published in book form.[1] An extended account of the conference appeared in our *Supplements* of April 29 and May 6, but it is an advantage to have the principal addresses in full and a more or less complete report of the open discussions which followed them. Such papers as those by Sir Arthur Salter, Professor Cathcart, Lord Astor, and Mr. L. S. Amery, to mention only four out of a dozen or more, were not mere introductions to debates but statesmanlike contributions to the subject. It will be remembered that the plan of the conference was first to deal with the medical or physiological aspect of nutrition, then to consider means of stimulating production at reasonable prices of the foodstuffs which it was important that the people should consume, and finally to proceed to the consumer side, in which the question of family allowances and of popular education in dietetics bulked largely. This gave a natural sequence to the proceedings, and the same also appears in the report. An interesting table accompanies Dr. G. P. Crowden's paper, in the shape of an attempt to work out national food requirements for war purposes on the supposition that the whole population ate neither more nor less than the modified version of the B.M.A. diets used in *Family Meals and Catering* and *The Doctors' Cookery Book*. For example, Dr. Crowden finds that the yearly requirements of meat for Great Britain on the B.M.A. basis (in thousand tons) would be 2,132, and that home production (in 1934) accounts for 1,422 and exports for 1,581, giving a total well above the minimum. For bread and flour, on the other hand, the B.M.A. scale would require (again in thousand tons) 4,464; home production in the same year was 650, imports 3,504, making a total of 300,000 tons less than the yearly requirement. Another piece of original material is the analysis of the way in which money provided by family allowances in the Cadbury firm is actually spent by the individual families, affording evidence of the extent to which family allowance schemes on a large scale may be expected to contribute to improved nutrition. The report is far more readable than most proceedings of conferences. Take the account given in Mr. Anthony Hurd's paper of a young Irishman who had come over

[1] *Nutrition and the Public Health*. British Medical Association, Tavistock Square, London, W.C.1. (2s. 6d., post free.)

to England as a labourer and contracted catarrhal jaundice. His English diet was very unsatisfactory, chiefly white bread, bacon, and tea, but he was of splendid physique, had a ruddy complexion and perfect teeth. He had come from the west of Ireland, where, he said, food was "very poor, very poor indeed," but it came out that he had been accustomed to have for breakfast porridge and milk and fat bacon; for dinner, the same with buttermilk and potatoes, and sometimes vegetable broth; for tea, oatcake scones, sometimes eggs; for Sunday dinner, perhaps a fowl with bacon and potatoes, and always a bit of salt fish, and, as they lived near a river, sometimes salmon, and at any time a rabbit—in fact, he had been nourished on the natural products of the west of Ireland. The compilation includes a full summary of the Hastings Lecture by Professor V. H. Mottram. Many who attended the conference, and many more who did not, will like to have this record of a stimulating three-days discussion.

BENZEDRINE

Benzedrine has now joined the sedate ranks of drugs that are of value if used with intelligence, discrimination, and mild scepticism. Extravagant claims cease to be made for it. At one point only can it be regarded as of paramount value, and that is in narcolepsy. Relief from attacks has been obtained in practically all the cases reported when given an appropriate dose. A few cases have been recorded by Young and Scoville[1] in which benzedrine in too high doses seems to have precipitated a paranoid hallucinatory psychosis. But in view of the now numerous cases treated with benzedrine this remote possibility of complications should not contraindicate its use, although it will stress the importance of careful determination of the dose. Much experimental work has been done on the antagonism between benzedrine and hypnotics. For this quality the drug can be employed with advantage in the treatment of barbiturate poisoning and as an analeptic in avertin anaesthesia. Cohen and Myerson[2] have also found it useful in counteracting the undesired effects of large doses of phenobarbitone in epileptics, without interfering with its anti-convulsant action. In the treatment of gastro-intestinal disorder benzedrine is of limited value. Originally it was thought to relax spasm of the pyloric sphincter and of the colon, delay the emptying of the stomach, and reduce peristalsis of the small intestine. From recent observations, however, it seems that in man these results are not to be relied on, that in some persons the effect is just the opposite; and in animal experiments it definitely produces spastic contraction of the muscles of the small intestine. Although the differences in the results may be explained perhaps by differences in susceptibility and in tone in individual patients, there is no precise indication for prescribing the drug in spastic conditions of the intestinal tract. Hill[3] has studied the effect of benzedrine on sea-sickness, as he expected the sympathicotonic action of the drug to counteract the vagotonia commonly present in this bouleversement of body and soul. Counting among his successes only those in which every fallacy could be safely excluded, he obtained satisfactory results in about two-fifths of his patients. It looks, therefore, as if benzedrine may prove to be a promising remedy for those who are not, as the Germans put it, "sea-fast." The first warning of possible physical damage from the indiscriminate use of benzedrine was given in this *Journal* by Davies,[4] who observed an acute aplastic anaemia in a person who took 190 mg. of benzedrine in the course of nineteen days. The patient made a complete recovery. It is noteworthy that Schube and Rashin,[5] who examined the blood of patients who had been given benzedrine orally or subcutaneously for considerable periods, found no sign of damage to the haematopoietic system. Dyer[6] has now confirmed the correlation between the dose given and the variation in blood pressure, as originally described by Peoples and Guttmann.[7] As a rule the fluctuations in pressure are moderate, but large variations are sometimes seen. Reifenstein and Davidoff[8] have recorded a rise as high as from 140/90 to 210/120 after 20 mg. of the drug. Caution is therefore indicated in all patients with a blood pressure that is slightly above normal. The benefit from benzedrine in chronic encephalitis, described by all writers on the subject, is probably due in part to the improvement in the mental condition, in part to the stimulation of motor activity. In these conditions the drug may be given alone or in conjunction with stramonium or hyoscine. Although statistics gathered by Davidoff and Reifenstein[9] suggest that this treatment leads to some improvement in 85 per cent. of cases, benzedrine can hardly be regarded as of much value in chronic encephalitis. The psychological effects on normal people, as outlined by Guttmann and Sargant[10] in this *Journal*, have been since confirmed by many writers. Bahnsen, Jacobson, and Thesleff,[11] in an extensive and carefully controlled study by means of a questionary, showed that a quarter of the subjects reported an improved attitude towards work, lessened fatigue, increased well-being, good humour, and talkativeness. The value of the drug in abnormal mental states has become more clearly defined. Depressed patients and those with symptoms of chronic exhaustion respond best. Davidoff and Reifenstein[12] continue to treat schizophrenic conditions, especially retarded catatonic cases; they have worked out a new method of alternating sodium amytal narcosis with intravenous injections of benzedrine. Apparently it is possible by their technique to make this group of patients more accessible; but what the ultimate prognosis is cannot be gathered from their published data. The much-discussed question of habit formation has not yet been settled, but the danger does not appear to be serious.

[1] *Med. Clin. N. Amer.*, 1938, **22**, 637.
[2] *Amer. J. Psychiat.*, 1938, **95**, 371.
[3] *British Medical Journal*, 1937, **2**, 1109.
[4] *British Medical Journal*, 1937, **2**, 615.
[5] *New Engl. J. Med.*, 1937, **216**, 922.
[6] *Amer. J. med. Sci.*, 1939, **197**, 103.
[7] *Lancet*, 1936, **1**, 1107.
[8] *N.Y. St. J. Med.*, 1939, **39**, 42.
[9] *Amer. J. Psychiat.*, 1939, **95**, 945.
[10] *British Medical Journal*, 1937, **1**, 1013.
[11] *Acta Med. Scand.*, 1938, **97**, 89.
[12] *Psychiat. Quart.*, 1939, **13**, 127.

A COLLEGE FELLOWSHIP IN SCIENCE

The following announcement appeared in the *Cambridge University Reporter*, June 6, 1939:

"The Governing Body of King's College, Cambridge, having made provision for certain Fellowships open to all graduate members and research students of the University of a certain age and standing, will shortly elect to a Fellowship associated with the memory of the late Mr. Edward Belcher Stringer, a former member of the College. The holder of this Fellowship will be designated Stringer Fellow. Candidates must be members of the University, under 30 years of age on December 6, 1939, whose study or research falls within the following group of subjects: the Natural Sciences, with a preference for (i) Physiology, (ii) Clinical Medicine, (iii) Pathology. Any candidate who is in doubt if his study or research falls within this group of subjects should consult the Provost. Applications should reach the Provost by October 16, 1939."

With the inauguration of a Department of Medicine there are now greatly improved opportunities at Cambridge for clinical and correlative research work. Whereas numerous college Fellowships in the past have been available for graduate students of physiology and pathology, there has hitherto been no recognition of clinical science as an appropriate subject for a fellowship, partly because facilities were lacking and partly because clinical science was not yet accepted as worthy of inclusion among the other natural sciences. This acceptance is now becoming general, and the announcement that a Stringer Fellowship at King's College may on this occasion be awarded to a candidate whose study or research falls within the group of subjects including medicine marks a further stage in the development of scientific medicine at Cambridge. For a man of suitable qualities the prospects and amenities of the appointment should offer strong inducements.

POPULATION QUESTIONS

In the course of an interesting debate last week in the House of Lords on population decline several speakers made remarks of significance. Lord Samuel said that "what was needed was a population policy, that the nation should become population-minded." Lord Snell agreed that "this most serious matter should be taken into urgent consideration." Lord Stamp declared that "it was necessary to bring home to the people not that there were certain trends going into the distant future, but that there were inescapable, inexorable facts facing us in the next few years." Lord Dawson, some of whose earlier utterances had seemed to indicate that he regarded a fall in numbers as of small importance provided attention were paid to quality, now said that "the fall of the population was too great even if we had regard to quality." This debate, with the rather agitated discussion at the Headmasters' Conference on the school population, shows that the public in general is at last beginning to be aware of facts and indications which have for some years now been presented to them by scientists and statisticians. It is clear that those who may not improperly be regarded as experts in this field look upon the situation more anxiously than those who are less well informed. It is true, also, that the exact causes of the decline, and the most appropriate remedies for it, are not yet established in detail. It is a good thing, nevertheless, that the demand for an official inquiry into all aspects of the subject should be more and more insistent. Lord Templemore, replying on the House of Lords debate, said that "the suggestion for a Royal Commission would be brought to the notice of the Cabinet," and indicated that more data were needed before a basis for policy could be established. It is to be hoped that this suggestion will mature quickly. In the meantime there are a number of organized movements which are promoting inquiry and accumulating data. Among the more important of these is the Population Investigation Committee, which is supported by the British Medical Association and on whose committee the Association is represented. On another page will be found a letter signed by four members of its medical subcommittee announcing the issue of a questionary and appealing widely for the co-operation of the medical profession. We commend the appeal on two grounds. In the first place the results of inquiry by this means can be reliable only if large numbers of careful and accurate replies are received. In the second place, in this particular matter, it would appear to be impossible to gather certain facts by any other method. For example, it should be possible by the recent Population Statistics Act to discover the number of women who are fertile and infertile, but some additional means is needed to ascertain the factors responsible for infertility, or for the voluntary restriction of births.

We publish this week at page 35 an account of the arrangements made to secure an adequate number of volunteer donors for blood transfusion in case of war. These arrangements are being co-ordinated by the Medical Research Council on behalf of the Ministry of Health for the supply of blood in London and the Home Counties. Plans for the rest of the country are being made entirely under local administration.

We regret to announce the death of Sir Frederick Hobday, honorary veterinary surgeon to the King, formerly Principal and Dean of the Royal Veterinary College, and for many years editor of the *Veterinary Journal*. Sir Frederick had many close contacts with the medical profession: he was an honorary Fellow of the Royal Society of Medicine and of the Hunterian and Harveian Societies of London, and honorary lecturer in comparative medicine at St. George's Hospital Medical School.

Sir Kaye Le Fleming, Chairman of Council of the British Medical Association, was the principal speaker at a luncheon held at the Rothamsted Experimental Station, Harpenden, on June 28, on the occasion of the annual gathering of agriculturists held by the station. He dealt in his address with the subject of nutrition and with the work of the B.M.A. in this field.

WAR WOUNDS AND AIR RAID CASUALTIES

The following is one of a series of lectures on the Treatment of War Wounds and Air Raid Casualties recently delivered at the British Postgraduate Medical School

THE PRINCIPLES OF TREATMENT IN GUNSHOT WOUNDS OF JOINTS

BY

CLAUDE FRANKAU, C.B.E., D.S.O., M.S., F.R.C.S.

If you consider the various joints in the body it will be clear that a joint comprising a single simple sac is uncommon. Most joints are complex, and are divided more or less completely into compartments. This arrangement tends to limit infection from injury for a time and also makes efficient sterilization of the joint cavity by irrigation more difficult. The synovial membrane is much more resistant to infection than is usually thought: this resistance is due in part to the synovial exudate, which appears to be bactericidal, and partly to the nature of the epithelium lining the joint. Injury to the epithelium by the use of strong antiseptics, ether, etc., is therefore to be avoided in the treatment of injuries. A secondary result of the changes in the character of the synovial exudate in infections is an alteration in the cartilage covering the bone ends forming the joint: this cartilage is partly nourished by the synovial fluid, and if this fluid is grossly affected the cartilage swells, softens, and tends to flake away or become easily eroded if submitted to pressure.

First Measures

The recognition of these points is of great importance in both treatment and prognosis of joint wounds. In the forward area a simple dressing should be applied and the joint should be immobilized by bandaging to the trunk or by splinting; nothing further should be attempted until the patient reaches the casualty clearing station. Here all cases should be regarded as urgent, and operation should be carried out as soon as possible. An *x*-ray examination should be made to identify the presence of a retained missile and to estimate the degree of bone injury. Accurate localization of metallic fragments by stereoscopic or other means is of great value.

The skin is sterilized over a wide area and the wound is excised down to the opening in the synovial membrane. In most cases, if there is a retained foreign body, a wider opening of the joint is necessary or a separate incision may have to be made. If this is the case a fresh set of towels and instruments, etc., should be used. After removal of the missile the joint is freely irrigated with saline or 1 in 2,000 flavine solution to remove fragments of clothing, etc., which may have been driven in, and to cleanse the joint cavity so far as is possible. The joint cavity is then closed by suture of the synovial membrane and capsule of the joint in one layer with interrupted catgut stitches. This may present difficulties in extensive wounds, but it is usually possible to mobilize the synovial membrane to some extent and so allow of suture of the opening, or fascial flaps may be employed to cover defects.

The late Captain John Campbell suggested the use of the olecranon bursa to fill in a gap in the synovial membrane of the knee-joint, and, acting on his suggestion and with his help, I applied this method in three cases. If it is impossible to close the synovial cavity, as may occur especially in the tarsal joints, the opening should be firmly packed with sterile gauze smeared with petroleum jelly: this acts as an effective seal and promotes local adhesions which close the joint. Where the joint has been effectively closed the soft parts may either be sutured if the case has been treated early, or left for secondary suture if doubts are felt about the efficient sterilization of the surface wound: in this case a light pack of flavine gauze (1 in 2,000) is the best form of dressing. After the application of dressings the joint is immobilized with extension on a suitable splint: *immobilization with extension is of the greatest importance, and must never be omitted.* Cases should be retained in the casualty clearing station for five to seven days if circumstances allow.

Treatment at the Base

At the base it will inevitably be found that in times of stress a number of patients will arrive with joint wounds which have not been operated on in the forward area. Some of these can be operated on in the way already indicated; others in which frank infection is evident must be treated by methods which will be described later.

On arrival of a case that has been operated on the splint and extension must be adjusted or reapplied and the condition of the patient must be carefully reviewed. Adverse symptoms are pain unrelieved by readjustment of the splint, pyrexia, raised pulse rate, insomnia, and loss of appetite. Adverse local signs are a dry and sloughy condition of the external wound, marked effusion into the joint, oedema of the limb below the joint, and extreme pain on the slightest movement. If these symptoms and signs are absent or abate with rest and adequate extension, movements may be allowed after the wound has been soundly healed for a week, provided there is no gross bony injury. Movements should be active and not passive, and must be very gentle at first. Any reaction following movement is an indication that further rest is essential. Major Everidge's apparatus in the case of the knee-joint is of great value in assisting early immobilization of this joint. In an uncomplicated wound of the joint with no gross bony injury and healing kindly, full restoration of function should be obtained in from six to nine weeks.

If pain, pyrexia, and effusion persist or arise after operation, aspiration of the joint must be performed at the most convenient spot. Gas-and-oxygen is preferable to local anaesthesia owing to the risk of infecting the area infiltrated with novocain. As much fluid as possible is withdrawn and retained for bacteriological examination. The naked-eye appearance of the exudate varies with the degree of infection: (*a*) mild infections show a yellow fluid with flakes of lymph; (*b*) in more severe infections the fluid is turbid; (*c*) in advanced cases the fluid may be obviously purulent. A stained film of the exudate is of value if an immediate diagnosis is needed before cultures can be made. Preponderance of mononuclear cells with few organisms which stain poorly suggests a mild or recovering infection. Excess of polymorphonuclear cells and large numbers of organisms are of grave significance. Bacteriological examination may reveal any

type of organism: gas-forming organisms, staphylococci, streptococci (non-haemolytic or haemolytic), etc.; the most dangerous organism is the haemolytic streptococcus.

If improvement follows aspiration it may be repeated at intervals of twenty-four to forty-eight hours: if no improvement results after forty-eight hours, or earlier in the case of the haemolytic streptococcus infections, more active treatment is necessary. The joint must be opened freely and be gently irrigated with 1 in 2,000 flavine solution: the wounds are subsequently left open, the joint being covered by a voluminous dressing and adequately splinted. The introduction of drainage tubes into the joint is to be avoided, as they do more harm than good, and I am not in any way convinced that the Carrel-Dakin method of treatment is of any value in these cases. Provided the general symptoms abate nothing further need be done: ankylosis is almost inevitable, and the limb must be kept in the optimum position for this.

If pain and fever persist amputation is indicated, and must be carried out before the patient has gone too far downhill. A special indication for amputation is spread of the sepsis outside the joint cavity into the surrounding muscles. Excision as a means of eradicating sepsis in an infected joint is unsatisfactory in the larger joints owing to the shock of the operation: in the smaller joints, such as the elbow, the free removal of bone fragments may assist drainage and conserve the limb, but no formal excision should be attempted.

The following table gives the results in a small series of cases in which treatment by primary excision and suture of the wound was used.

Wounds of Joints without Gross Bony Injury

	Cases	Healed	Failed
Knee-joint	16	14	2
Shoulder	4	4	0
Elbow	18	16	2
Ankle..	7	5	2
Totals	45	39	6

MEDICAL ASPECTS OF CRIME

MAGISTRATES' ASSOCIATION IN CONFERENCE WITH B.M.A.

A conference summoned by the Magistrates' Association, with the co-operation of the British Medical Association, was held at the B.M.A. House in London on June 23. The object of the conference was to consider how medical and psychological knowledge could be made available to magistrates in their duties, both in court and elsewhere. The first of the two sessions was presided over by Lord Alness and was devoted to juvenile crime; the second, presided over by Mr. G. A. Bryson, to adult crime.

Juvenile Delinquency

Lord ALNESS contented himself with making what he described as two elementary suggestions from his long judicial experience. The medical man when submitting evidence to a court should use simple, non-technical language. Nothing irritated a court more than a report or other evidence abounding in polysyllabic and unintelligible words and phrases. He also urged that such evidence should be as balanced and judicial in character as possible.

Miss MADELEINE SYMONS, J.P., president of a London juvenile court, said that in the juvenile courts of the metropolis in 1938 the number of serious cases found proved was 3,196; in 526 of these, special reports were obtained by the courts from the medical psychiatrist at the remand home, and a considerable number of others were obtained from various sources with regard to persons on bail (the Institute for the Scientific Treatment of Delinquency alone furnished thirty-nine such reports). No doubt all magistrates and others concerned had felt the lack of adequate medical facilities—facilities which would in time be stimulated throughout the country as a result of the financial provisions of the Criminal Justice Bill. Such medical services as the courts needed could not, with the best will in the world, be obtained in a short time. In the absence of such facilities the magistrates must rely on getting reports from well-trained probation officers, with plenty of time to do their work properly, and the magistrates must also educate themselves, with such help as the medical profession could give them, so as to become more skilful in deciding the appropriate treatment.

Dr. WILLIAM MOODIE, medical director of the London Child Guidance Clinic, addressed the conference on some indications for special medical examination. He said that very often the psychiatrist, having had practice through seeing numbers of cases, could recognize a mental defective who might not be recognizable to the ordinary eye under the stress of conditions in court. He agreed as to the frequent inadequacy of the reports from medical people given to the courts; the reason was that the doctor was often required to make a report without having all the relevant information, so that it had to be more or less intuitive, the deductions being built on quite slight observations.

Dr. J. D. W. PEARCE, medical psychologist, L.C.C. remand home, discussed observation and diagnosis. It was necessary for the examining doctor, he said, to be in touch with general medicine, and at the same time to know psychology and to have had psychiatric experience. Physical examination was an important, if humdrum, part of the work. As to the psychiatric examination, a very important matter was its flexibility. He also stressed the need for being definite in the report; it was of no use saying that such and such a thing was probable. In view of the fact that the majority of the offenders who needed examination were boys, he thought a man doctor should be employed for the purpose.

Dr. DENIS CARROLL of the Institute for the Scientific Treatment of Delinquency spoke on treatment, by which, he said, he meant any method of handling offenders with a view to their reform. Nearly all the delinquents who came for observation revealed a multiplicity of causes which led up to the delinquency. From a medical point of view it was important to see that any important cause, or any cause which if it persisted was likely to lead to recurrence of the delinquent action, should be dealt with. Causes were superficial or deep. Superficial causes were in the immediate circumstances which led up to the delinquency, and could be dealt with by probation officers; deep causes were pathological mental traits or disorders and needed medical advice every time. Dr. Carroll considered that the remand in custody of a juvenile offender was unnecessary as a matter of routine. A large number of such offenders could be better dealt with in out-patient clinics, especially if there was attached a small in-patient observation department. Treatment could be obtained in any psychiatric out-patient department of a general hospital which had a children's branch—where there was not a children's branch such a department was not suitable for the purpose—and at any child guidance clinic.

Men or Women Doctors?

In some subsequent discussion Dr. Pearce's point about the desirability of a man doctor was taken up. He explained that not only were male offenders in the majority, but the female offenders were very largely girls of 16 or 17 who were brought up for some sex offence, and these were more responsive, he thought, to a man than to a

W. HUNTER AND HARRY W. DRYERRE: DUODENAL ULCER IN THE NEWBORN

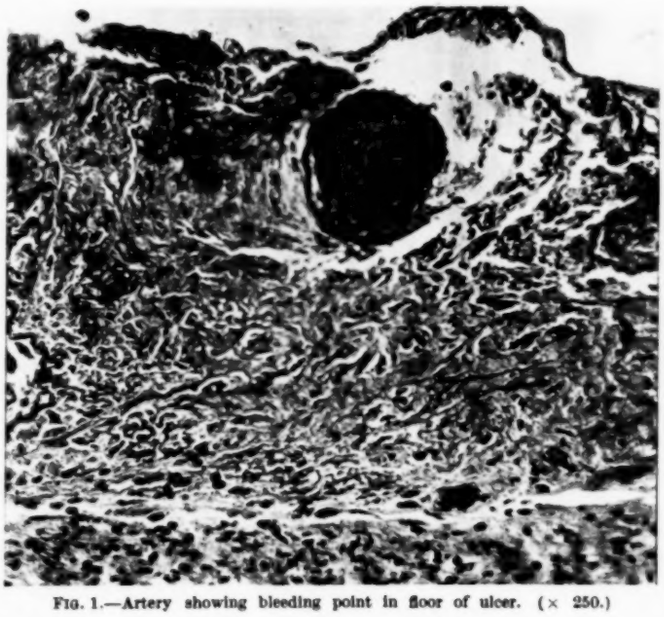


FIG. 1.—Artery showing bleeding point in floor of ulcer. (× 250.)

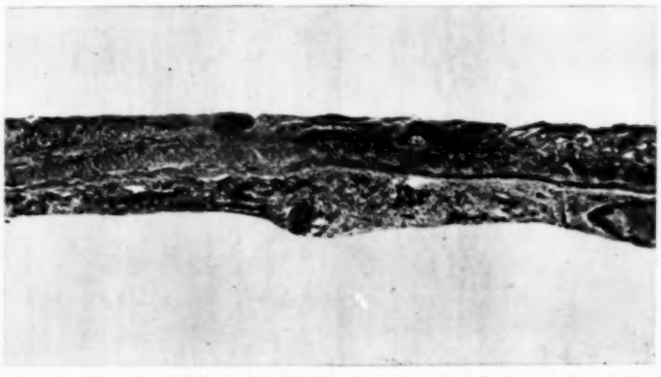


FIG. 2.—Ulcer in posterior wall of duodenum; two vessels in base and normal epithelium at edges. (× 15.)

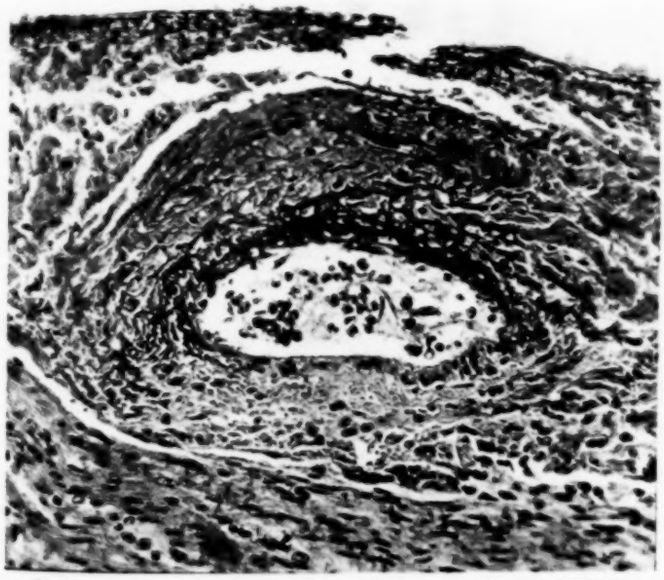


FIG. 3.—Artery in floor of ulcer showing digested state of wall. (× 250.)

JOHN T. INGRAM: SEBORRHOEIC DIATHESIS

FIG. 1.—Case of Seborrhoeic eczema of metabolic origin.

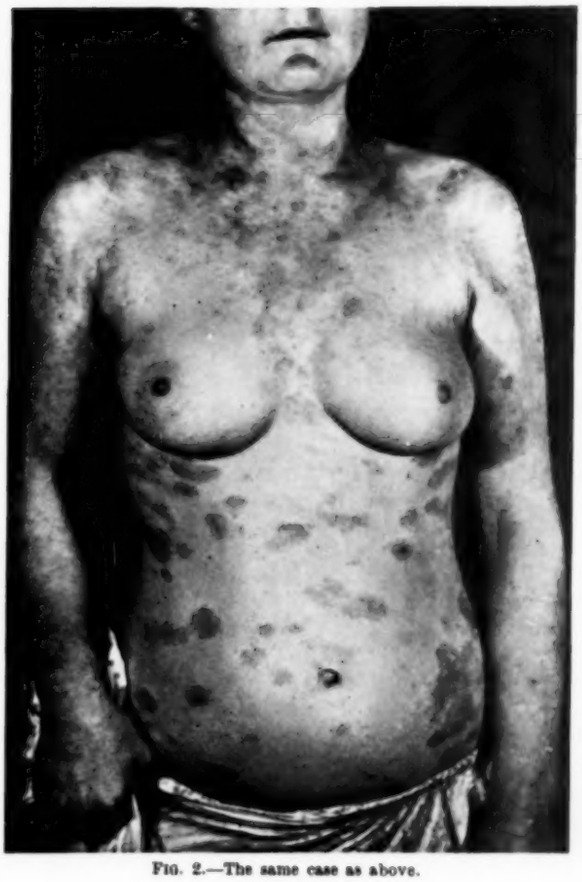


FIG. 2.—The same case as above.

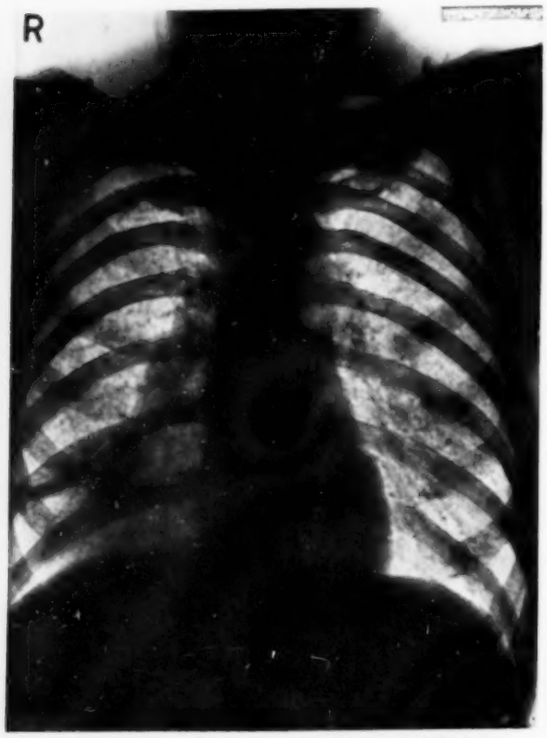


FIG. 1.—Radiograph of chest showing infiltration at both apices, consolidation in right lower lobe, and mottled shadows in both lung fields.

FIG. 2.—Right lung in sagittal section, showing dark anthra-silicosis, most marked in the upper lobe, and white neoplastic extension from the lower lobe bronchus with glandular involvement and small lung metastases.

FIG. 3.—Edge of anthra-silicotic nodule, × 100: A, relatively normal lung; B, compressed lung tissue laden with pigment; C, collagenous fibrous tissue; D, compact centre.

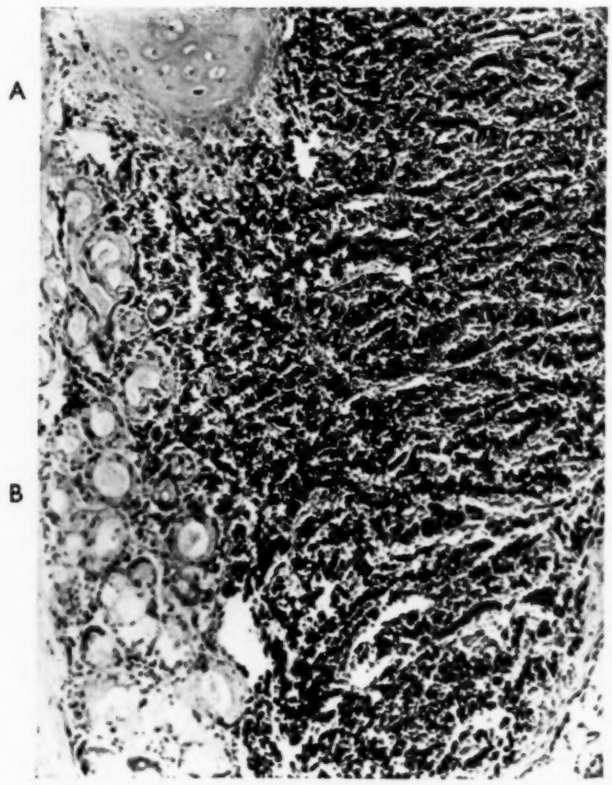


FIG. 4.—Edge of bronchial carcinoma, small oat-cell type, × 100: D, lung tissue; C, carcinoma; B, bronchial mucous glands; A, bronchial cartilage.

FIG. 1.—Morbilliform rash due to M & B 693 appearing on the eighth day of administration and photographed two days later. Note general distribution and coarse macular character of the eruption, which tends to be confluent on the arms and other areas exposed to sunlight.

FIG. 2.—Same patient as Fig. 1. Note bloated features but absence of catarrh.

FIG. 3.—Severe reaction after M & B 693 in a sensitive patient. Heavy semi-confluent morbilliform rash becoming vesicular on the face, with severe stomatitis and cheilitis.

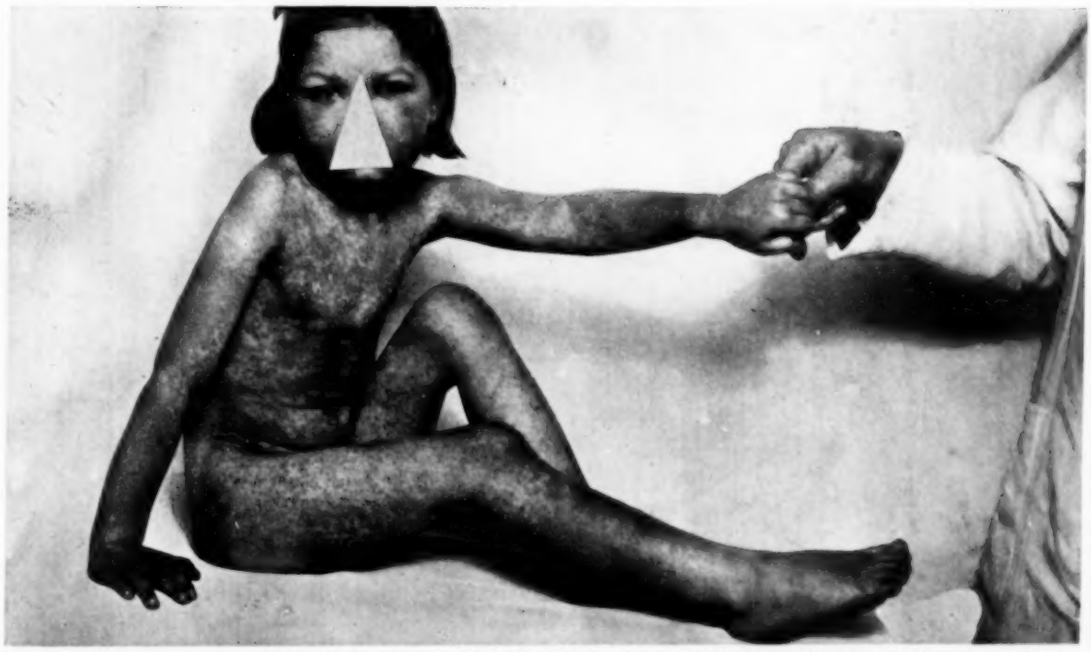


FIG. 4.—Rubella-like eruption appearing ten days after first giving M & B 693. The macules are finer and less deep in colour than in Figs. 1 and 2. There is some suffusion of the conjunctivae and a tendency to confluence of the rash on the extremities normally exposed to sunlight. The following day the eruption became scarlatiniform on the trunk.

GEORGE L. FOSS: ORAL APPLICATION OF METHYL TESTOSTERONE AND ITS SIMPLIFICATION OF ANDROGEN THERAPY

FIG. 1.—Case 2. Photograph of penis, 2 cm. in length, and scrotum, on February 1, before treatment was started.

FIG. 2.—Case 2. Photograph on March 8 after 1,800 mg. of methyl testosterone in 36 days, showing growth of penis to 4·5 cm. long, also development of scrotum. The filling of this is due to growth of epididymes.

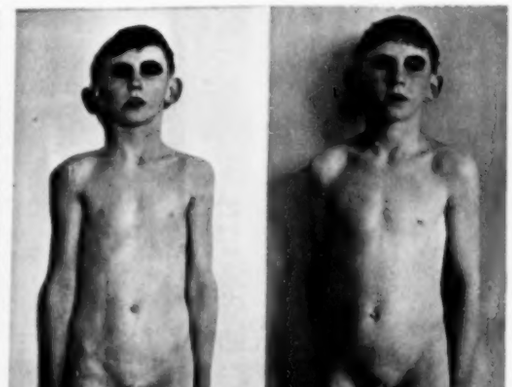
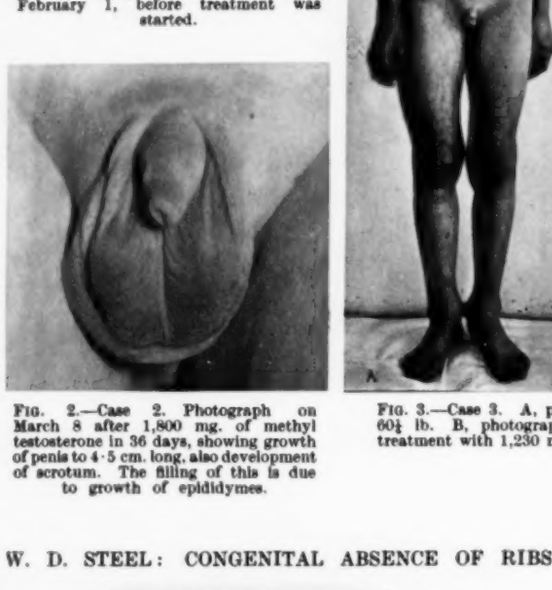


FIG. 3.—Case 3. A, photograph on March 8; weight, 60½ lb. B, photograph on April 19 after 41 days' treatment with 1,230 mg. methyl testosterone; weight, 73 lb.

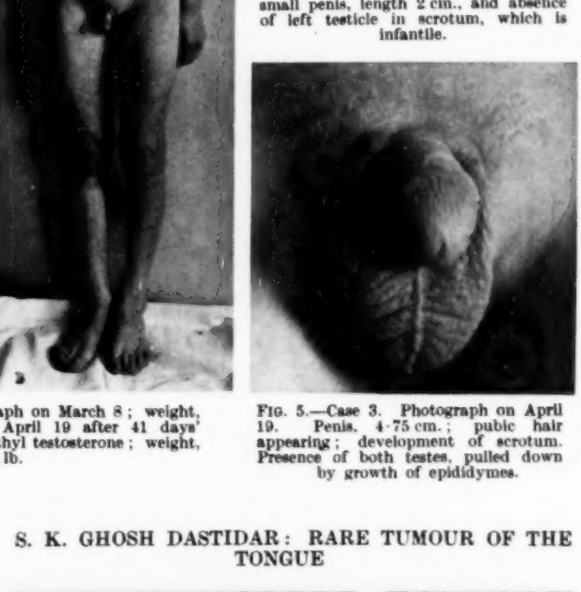
FIG. 4.—Case 3. Photograph on March 8 before treatment started, showing small penis, length 2 cm., and absence of left testicle in scrotum, which is infantile.

FIG. 5.—Case 3. Photograph on April 19. Penis, 4·75 cm.; pubic hair appearing; development of scrotum. Presence of both testes, pulled down by growth of epididymes.

W. D. STEEL: CONGENITAL ABSENCE OF RIBS



S. K. GHOSH DASTIDAR: RARE TUMOUR OF THE TONGUE



woman doctor. On the other hand, Mrs. BIRLEY, a magistrate of Manchester, said that in her experience a woman doctor got a better result in dealing with girls. Dr. HELEN BOYLE, a member of the Mental Health Committee of the B.M.A., affirmed that some boys responded better to a woman doctor than to a man. It had been found best in her experience to have both a man and a woman doctor and not to restrict either to the cases of his or her own sex. Quite often a boy who was amenable to a woman doctor would resent treatment by a man doctor owing to some hidden conflict with his father. Dr. PEARCE said that few authorities could consider the appointment of both a man and a woman doctor. The great majority of delinquents were boys, and it was in a very small number of cases that the negative attitude was encountered.

Mr. CLAUD MULLINS, metropolitan magistrate, said that he would like one of the psychologists to tell them to what extent he thought that punishment coupled with treatment was likely to be beneficial. He had always himself felt that the rule that no punishment should go with probation was disadvantageous. Possibly where there was a need for a psychological treatment there might also be value in a monetary fine. Psychological treatment by itself might result in a great deal of self-sympathy and a total absence of the feeling of blameworthiness.

Sir ROBERT ARMSTRONG-JONES said that the opinion expressed to the justices should be that of a medical man, not that of a pure psychologist; also preferably a medical man who had had experience in a mental hospital. Dr. R. F. BARBOUR, medical director, Bristol Child Guidance Clinic, mentioned the need for examining the offender in neutral surroundings. An interval of two or three days should elapse before the offender was examined after his court experience, and the examination should not take place on police premises.

Adult Crime

In opening the session on adult crime Mr. F. J. O. CODDINGTON, stipendiary magistrate of Bradford, placed before the conference certain reflections on cases which were dealt with by magistrates as distinct from those which went to the higher courts. Those with whom the magistrates had ordinarily to deal were persons who had committed relatively small offences, such as petty theft. A large proportion of them were first offenders, or at least had seldom been before the court. A very large number, if properly dealt with, could be prevented from committing any further crime and turned into decent citizens. A fine itself was sometimes of reformative value, especially if paid in instalments. Among women shoplifters he had been astonished at the amount of ill-health and maladjustment that was discovered. Precipitating factors were the climacteric, pregnancy, definite illness, epileptic tendency, senile decay, the anxieties attendant on loss of sight or hearing, staleness and need of holiday, and—a strict husband! With regard to petty sexual offenders, he had sent for a doctor and had then been able to bind them over in almost every single case. Many offences were due simply to loneliness and friendlessness or to an inferiority complex, not using the term in its ultra-psychological significance. It was far better to send too many than to send too few for medical examination. Where the offence was a bad one it was a good thing to give the offender a thorough fright by remanding him in custody. Mr. Coddington criticized the methods of some doctors as examiners. Some were concerned only to see if the man was insane, others to see whether he was physically unfit. What he wanted was a medical examination interpreted in a common-sense way. Discussion from the psychological—not the psycho-analytical—point of view was a help. The psychiatrist was a person of great value and he did not wish to depreciate him in any way. But this special skill was not required in the case of the great majority of these petty delinquents. The doctor's report did not always discover why a man had committed the offence, but it did help to indicate treatment, and that was a great advantage. He found that the delinquent responded to medical treatment. The offender came to court thinking everyone his enemy, and he found to his astonishment that he had friends in the doctor and the probation officer, and, in a more distant way, in the magistrate, and that brought him to a more social point of view.

Dr. F. W. EURICH, emeritus professor of forensic medicine, Leeds University, who has assisted Mr. Coddington, said that most offenders were obstructive or reticent when first seen, until they learned that he was not a police officer, had nothing to do with the court, and would not go into the witness-box, and, moreover, that the magistrate was interested in their welfare, not in their punishment. One might wonder why the doctor went so far outside his terms of reference as to go into the family history, for example, but the duty of the doctor concerned not simply the treatment of diseases but the whole study of man. He had felt it his duty to enter into matters which were not really medical. This speaker made the suggestion, very cautiously, that the fumes which got into a badly ventilated motor-car, resulting in dizziness and inco-ordination, might be the real cause in many cases of reckless driving and accident which were attributed to alcohol.

Types of Delinquency

Dr. J. R. REES, medical director, Tavistock Clinic, suggested that the relationship of the psychiatrist to the magistrate was the same as that of the hospital and specialist to the busy general practitioner. For some time to come they would have to be content with providing, mainly, better diagnosis and good advice as to disposal; an efficient treatment service could not be organized rapidly. He urged doctors and magistrates to get together with a view to instituting more research on treatment. He put in a classification of the chief varieties of mental abnormality which had been compiled at the Tavistock Clinic for the benefit of those called upon to study medical reports on delinquency cases. It had three categories. The first included cases with a physical basis—that is, where the brain tissue itself is defective or diseased in some way, these being subdivided into organic disease and mental defect. In the second category were cases of psychosis, in which there was frequently a constitutional or hereditary basis, though environmental and psychological factors might contribute. The third category included cases with a psychological basis, and was subdivided into trivial delinquency (simple aberrations of conduct), simple delinquency (anti-social behaviour due to bad home environment and lack of discipline), reaction character traits (tendencies developed in the mind to cover or mask an opposite tendency, and representing the commonest type of mental abnormality leading to anti-social conduct), and, finally, psychoneurotic delinquency, to which many sexual perversions as well as drug addictions belong. In any case of delinquency it was important to determine as accurately as possible to which of these groups the particular act belonged, in order to prescribe the proper method of dealing with the condition. The diagnosis is not, however, always a simple matter, and some cases may merge into several of the groups.

Mr. G. A. BRYSON, vice-chairman of the Magistrates' Association, suggested continued collaboration between his society and the British Medical Association with a view to other conferences of a similar nature. Dr. R. G. GORDON, chairman of the B.M.A. Mental Health Committee, said that he was sure the British Medical Association would continue to give all the help it could. It might be useful, he added, to have a joint committee to watch the situation and call conferences when the time seemed opportune, not only in London but in other parts of the country.

The suggestion for a joint committee was accepted by the conference.

THE LISTER INSTITUTE

ANNUAL REPORT

The Lister Institute of Preventive Medicine has recently published its forty-fifth annual report. We give here a brief review of some of the work which has been undertaken during the past year and of which details are given in the report.

Work on Viruses

Dr. G. H. Eagles with Dr. W. H. Bradley and other collaborators has further investigated the agglutination by sera from rheumatic patients of suspensions of virus-like particles obtained by high-speed centrifugation from acute rheumatic exudates. Agglutination was effected equally well by sera from cases of rheumatic fever, cases of arthritis of the rheumatoid type, and cases with arthropathies not classified as true rheumatism but with joint pain as a presenting symptom. No consistent relation between the agglutination and the clinical progress of any case could be found. Work has also been started to determine whether these virus-like bodies are really the filterable elements, or possibly the breakdown products, of a pleuropneumonia-like organism recently isolated at the Rockefeller Institute from rheumatic fever exudates.

Dr. M. H. Salaman has inoculated rabbits with vaccinial elementary bodies rendered non-infective by heat or by formalin. The immune response to these inocula differed from that of rabbits immunized with active virus by reason of its irregularity and the absence of precipitin production. Dr. Marjorie G. McFarlane has shown that homogeneous suspensions of vaccinia virus contain phosphodiesterase as well as phosphatase and catalase, and Dr. A. S. McFarlane that the flocculation of this virus, hitherto regarded as an irreversible process, is actually reversible. Experiments conducted by Dr. D. McClean with Dr. R. G. Henderson on the intradermal immunization of groups of nurses and children with suspensions of vaccinial elementary bodies seem to indicate that the development of a full immunity may depend upon the production of a typical vaccinial vesicle at the primary vaccination. When applied by scarification the suspension of elementary bodies gives rise to typical vesicles with constitutional reactions indistinguishable from those produced by vaccine lymph. So far, animal experiments suggest that there is no significant difference in the degree of immunity attained following a single inoculation either by the intracutaneous route or by scarification.

Serological Studies

Dr. H. L. Schütze has tested the effect on plague infection of 2-sulphanilyl-aminopyridine (M & B 693), soluseptasine, and a diamino-diphenylsulphone glucoside. All three had a considerable curative effect: M & B 693 was most effective in both rats and mice; soluseptasine protected rats and not mice; and the sulphone compound mice but not rats. He has also been responsible for the investigation of a question which was discussed at length in the correspondence columns of the *Journal* during and after the Croydon typhoid epidemic of 1937: Is it or is it not desirable to carry out anti-typhoid vaccination in a population which has been exposed to typhoid infection? In a leading article published at that time (*Journal*, December 4, 1937, p. 1128) it was stated that "examination of actual evidence lends no support to this purely theoretical objection [the conception of the "negative phase"]: on the contrary, there are good reasons for believing that vaccine is strongly indicated under these conditions." Using *S. typhi murium* as the infecting organism in mice, Dr. Schütze has demonstrated that vaccination started after infection not only does no damage to the animal's normal resistance, but actually enhances it in a considerable proportion of cases.

Dr. A. Felix has continued his work on the standardization of therapeutic anti-typhoid serum by separate quantitative estimations of the Vi and the O antibody. Dr. D. W. Henderson has shown that the dose of the Vi or the O antibody necessary for prophylaxis in the mouse is determined not by the virulence of the test strain but by the number of organisms in the test dose.

Dr. A. S. McFarlane has collaborated with Dr. N. Hamilton Fairley in studying by means of the electrophoresis apparatus the brown pigment in the blood in blackwater fever. The results obtained support the view that this pigment is formed by the union of serum albumin and haematin.

The work of Dr. D. W. Henderson and Dr. D. McClean on the diffusing factor elaborated by *Vibrion septique* seems to indicate that the addition of an anti-diffusing serum to minimal protective doses of anti-bacterial serum increases the protection afforded against the development of infection with *Vibrion septique*.

Endocrinology

Dr. V. Korenchevsky's work on the effects of prolonged injections of male sex hormones on normal and senile male rats was published in full in the *Journal* of January 7 (p. 4). He and his collaborators have also shown that the development of the sex organs may be stimulated or depressed by certain of the male hormones according to the dose injected; the depressive effect is seen when weak male hormones are injected over long periods. Testosterone dipropionate, oestradiol dipropionate, and oestradiol benzoate-butyrate are very slowly absorbed from the subcutaneous tissues. It has been demonstrated that with certain doses the maximum effect of the first two hormones was maintained for at least ten days, and that of oestradiol benzoate-butyrate for more than 106 days, after the discontinuation of the injections. Work has also continued on the neutralizing effect of male hormones. Prolonged administration of oestradiol dipropionate brings about a tumour-like hyperplasia of the hypophysis in castrated males and actual tumour formation in the hypophysis in ovariectomized females. The injection of male hormones neutralizes more or less completely these and other pathological effects.

Vitamin Studies

The recent isolation of relatively pure preparations of vitamin A and its esters has raised the question of the desirability of retaining pro-vitamin A, β-carotene, as the International Vitamin A Standard. An international unit for vitamin B_1 has been defined as the potency of 3.0 μg of a sample of pure vitamin B_1 (aneurin) hydrochloride which was the subject of a collective investigation, and there is now in contemplation the standardization of vitamin E. With this end in view a co-operative international research has been planned to test the potency of a specimen of pure synthetic *dl*-α-tocopherol acetate.

Dr. T. F. Macrae and his co-workers have continued their investigation of the vitamin B_2 complex and have proved the existence in this complex of a further unidentified factor over and above the riboflavin factor, the "yeast eluate factor" corresponding to György's "vitamin B_6" and Lepkovsky's "Factor 1," and the "yeast filtrate factor" which is Lepkovsky's "Factor 2." The "yeast filtrate factor" has now been obtained from liver in a highly purified state, so that the isolation of the pure vitamin will probably be achieved in the near future. The forms in which this factor occurs in yeast and in liver are biologically identical but chemically distinct. Work begun by Dr. Harriette Chick on the dermatitis and other disorders in rats deprived of one or more members of the vitamin B_2 complex continues, and Dr. P. Ellinger is examining the effects of vitamin B_2 deficiency on the excretion of porphyrins. The work on pigs designed to throw light on human pellagra has progressed, and it has been shown that pigs on a synthetic diet lacking the eluate factor become severely anaemic and develop epileptic fits, while lack of the filtrate factor leads to paralysis of the hind legs.

Dr. S. S. Zilva and Dr. A. E. Kellie have experimented on themselves, determining the ascorbic acid content of the blood and the urine during "saturation" and "unsaturation" and at different intervals after taking varying doses of vitamin C. The figures obtained suggest that there is no constant renal threshold for the blood ascorbic acid, but that there is a competition for it between the tissues absorbing ascorbic acid and the kidneys. Blood levels determined at random, therefore, do not indicate the degree of "saturation" of a subject. Dr. Zilva is also continuing his study of the photochemical decomposition of *l*-ascorbic acid and an investigation of the vitamin C content of King Edward VII potatoes, which is at a maximum in early September. Work is also in progress on the effect of prolonged storage on the vitamin C content of canned apples and canned potatoes, and on the conversion of 2-keto-methyl pentoses into analogues of ascorbic acid.

The synthesis of racemic α-tocopherol and racemic β-tocopherol, the active constituents of wheat-germ oil, has borne out the conclusion previously arrived at by Dr. A. R. Todd, Dr. F. Bergel, and their collaborators, and degradative studies have now made it clear that α-tocopherol is 6-hydroxy-2:5:7:8-tetramethyl-2-[4′:8′:12′-trimethyl-tridecyl]-chroman. Several isomeric tocopherols have been synthesized and found almost as active as the naturally occurring vitamin E.

Other Work

Dr. Harriette Chick has shown that albino rats fed on a diet of buckwheat (*Fagopyrum esculentum*) are sensitive to sunlight. No sensitizing action took place if the husks were removed from the ground buckwheat meal, and the sensitizing material seems to be present in the greatest amount in the flowers of the young plant. Dr. and Mrs. Lennerstrand have begun an investigation of the significance of diphosphoglyceric acid. The concentration in the blood of this acid-soluble phosphoric ester is known to vary greatly in certain pathological conditions. Dr. I. Smedley-MacLean and Dr. L. C. A. Nunn have shown that young rats on a fat-free diet cease to grow or to store fat and develop a scaly tail and a scurfy condition of the skin. The cure of this condition by adding to the diet a small daily dose of linoleic or linolenic acid has been investigated: the former has been proved to be at least six times as potent as the latter. These workers deprecate the retention of the term "vitamin F" which was applied by Evans to these two acids. Other studies undertaken by members of the staff of the Lister Institute include work on the avian sarcomata; cow-pox, horse-pox, and swine-pox; plant viruses; the immune reactions of the ciliates of the species *Glaucoma*; immunity to tumour transplantation; the chemical nature of bacterial antigens; and physico-chemical investigations of serum proteins. In addition, the National Collection of Type Cultures of Micro-organisms has continued to expand.

W. J. Davies (*N.Y. St. J. Med.*, 1939, **39**, 1084) has collected seven cases of diphtheria of the pleura, including one of his own. The ages of the patients ranged from 3 to 51 years; there is no predilection for either sex. All were diagnosed before death; only two survived. Antitoxin was given in all but two cases. In all the patients the pleurisy was latent and *C. diphtheriae* was probably a secondary invader. Except in the two patients who recovered there was an associated streptococcal infection. Davies's patient was a man aged 40, admitted to hospital with a perforated gastric ulcer for which he underwent operation. A week after the operation he developed right-sided pleural effusion, cultivation of which showed staphylococci and streptococci. Rib resection was done. The wound continued to slough, and the entire pleural cavity became covered with a thick dirty grey membrane. The fetor from the discharge was very pronounced. Cultures from the discharge and membrane were positive, but a virulence test was not done. Death took place.

VOLUNTARY HOSPITALS AND SOCIAL POLICY

A LIVERPOOL "TESTAMENT"

To emphasize the part played by the voluntary, and especially the teaching, hospital in safeguarding the health of the community, the Royal Liverpool United Hospital has published a *Hospital Testament*.[1] The word "testament" appears to be popular on Merseyside and Deeside, but this document is worthy of some high-sounding title. The case for the voluntary hospital has often been argued on sentimental grounds, but here it is argued on the grounds of common sense and sound social policy. The statement has been prepared at the request of the committee of the United Hospital by Mr. A. V. J. Hinds, partly to prepare the way for an appeal which will presently be launched for a great building development in Liverpool similar to that which has recently come to fruition in Birmingham.

After a foreword by Lord Dawson of Penn, who says of the leading voluntary hospitals that they "enfold a clinical wisdom and tradition of service . . . which the community could ill afford to lose," the Testament meets the question candidly: "Why not a State hospital service?" It is frankly admitted that it is not easy to justify the dependence on charity of so necessary a thing as hospital treatment, and that the care of the sick is part of a collective obligation. But it is also pointed out that the care of the sick is only one part of hospital service to the community. The voluntary hospital attached to a teaching school is the source of all the services, for the general practitioner, the specialist, and the consultant all received their training there.

The Hospital and the Medical School

This close connexion between medical practice and hospitals is not of ancient origin. Not until the end of the seventeenth century did the hospital wards begin to supplant the mediaeval universities in the teaching of medicine. It was in England that the tradition was established that the medical student should "walk the hospitals." The first medical schools for clinical teaching were associated with hospitals, not with universities. The Liverpool school, though it is now attached to the university, antedates the university by about a hundred years. The last stage in the development of the medical school has been fusion with the university, a union which has meant that pure science is allied to clinical experience. Without the hospital research in clinical medicine would be unproductive, because the hospital is the only laboratory in which the effects of disease on human beings can be observed on a large enough scale. In a word, the hospital service provides the community with a trained medical profession, general and specialist, and is the most important factor in the advancement of medical science.

It is by voluntary hospitals that all three functions of the hospital service—curative, educational, and scientific—have been fulfilled. They were founded to provide treatment for the sick poor. As years went on and the possibilities of effective hospital treatment grew they took in not only the sick poor but the sick of any class. They now have the distinction of treating those cases which need the greatest skill and attention. Meanwhile the State has placed upon local authorities the obligation to find a bed for anyone who would benefit from hospital treatment; but the voluntary hospital, while not claiming to be equal to the task of looking after the whole community, still preserves the other two functions—educational and scientific—of hospital service. All members of the medical

[1] The University Press of Liverpool. Hodder and Stoughton Ltd., London. (6d. net.)

profession qualifying in Great Britain have been trained at one or other of the thirty-two medical schools, and all such schools are associated with one or more large voluntary hospitals.

Honorary Medical Staff

The writer of the Testament reminds his public that the charity of a voluntary hospital does not consist alone in the subscriptions of the generous. Long ago private doctors gave their services freely to poor patients in hospitals. As hospital treatment became more specialized the honorary medical staff came to be composed of the local consultants, who, while commanding the highest remuneration in private practice, continued to give their services voluntarily in hospitals. Admittedly they derive valuable experience and prestige from their hospital position; nevertheless, the service is genuine in spirit and generously given, and the economic motive is far in the background. From this it naturally follows that the medical schools accept as teachers the members of the honorary staff. In most schools the clinical teachers receive practically no payment, but here again their enhanced prestige, particularly among the students who work under them and will later go out as general practitioners, is an indirect recompense.

Thus the system, illogical as it is in some ways, does ensure that there are on the medical staffs the most brilliant members of the profession and those most capable of instructing the doctors of the future. Here we have "the best guarantee of an alert and enterprising medical profession, and on the existence of a medical profession of this calibre depend the efficiency of hospital treatment, the advance of medical science, and the maintenance of high standards throughout the medical services." It is because the voluntary hospital system is better able to give this guarantee than a State-controlled system that it must be preserved. The work of the member of the honorary staff, alike as hospital doctor and teacher, must be maintained at a high standard if he is to be provided with an income in his private practice. If the quality of his hospital work deteriorates his reputation is damaged and his private practice suffers. He has thus a constant incentive to achieve distinction which would be lacking were he a salaried officer. Further, his eminence in his profession is maintained only by the confidence of those he serves, and the persons who have the greatest say in giving him employment as a consultant are general practitioners who are judging him as experts.

Under a rate-supported system the appointment and promotion of medical staff must necessarily be more rigid than under a voluntary. The voluntary lay committee, though it has the ultimate power of appointment, in practice confines itself to exercising a watching brief over the selections which are agreed upon by the medical staff themselves. Appointment and promotion depend on the merits of the man in the judgment of his colleagues.

Six Points

The argument is simplified in a six-point statement, which here is reduced again to the barest skeleton. The voluntary hospital ensures:

1. That only the best brains of the medical profession are accorded distinction.

2. That the best brains of the medical profession are not at the command only of the wealthy but of the whole public.

3. That the best brains of the profession are not only engaged in the practice of medicine but are at the disposal of the public as university teachers of medicine.

4. That for the performance of these public services the medical profession is remunerated not by fixed salary but indirectly by the rewards of private practice in such a way as to provide the maximum achievement of excellence.

5. That the teaching of medicine in the universities and research into new methods of treatment are guided and controlled by independent laymen whose loyalty to a single purpose permeates and inspires them to provide the funds required for a bold policy of advancement.

6. That in the hospital service it is advantageous to have a variety of approach, on the one hand through public bodies and on the other through private and voluntary institutions, and that the existence of the two types of institutions affords a useful basis of contrast and a stimulus to friendly rivalry.

The voluntary hospital is one of the few institutions—the university is another—which, although performing essential public services, are still in private hands. The justification for its continuance is not only its noble share in the alleviation of suffering but in the fact that it safeguards the future of medicine.

Hospital Service in Liverpool

And so from the general to the local. In Liverpool there are nine voluntary hospitals associated with the medical school. They have 1,400 beds, as against the 3,000 of the municipal hospitals. They have no desire to compete in respect of the number of sick accommodated. The number of beds is appropriate for the needs of the medical school and consistent with the number of members of honorary staffs whom Liverpool can support in private practice. The four general hospitals, with about 850 beds, have been amalgamated under the name of the Royal Liverpool United Hospital. To maintain reasonable efficiency all of them would have to contemplate within the next twenty years almost complete rebuilding, although the oldest of them, the Royal Southern, dates back only for sixty-seven years. Instead of patching existing buildings opportunity is to be taken to build one entirely new hospital with bed accommodation equal to the existing four, and 150 beds for paying patients besides. As to the five special hospitals, when the time for their rebuilding comes, an endeavour will be made to relate them in some sort of hospital centre.

The claims of a central and of a suburban site have been considered. The Birmingham Hospital Centre is three or four miles from the city, but there the deciding factor was not the country surroundings but the proximity of the university. In Liverpool the site which it is hoped to acquire—on the height overlooking the new cathedral—will be within walking distance of the university, several of the special hospitals will be not more than a mile away, and Rodney Street will be in the immediate neighbourhood.

The document goes into some financial detail. At present the four hospitals are running at a loss. There was a deficit in 1938 of £10,000, or of £31,000 if legacies are deducted, as they should be, from maintenance income. The "penny-in-the-pound" contributory scheme, organized by the Merseyside Hospitals Council, is the most important factor in hospital support. But it is felt that the interest must be widened, especially if the appeal for capital sums is to be successful, and more subscribers as distinct from contributors must be enlisted. For capital purposes the ultimate need will be a sum of over one million. The appeal is to be addressed to the outside world as well as to Merseyside, and the outside world is reminded of what Liverpool has given to medicine in men like Robert Jones and Ronald Ross. Not that Liverpool any more than any other place can manufacture men of genius, but it has the glory of having provided the environment and facilities. Nevertheless, the greater responsibility for this hospital of the future will rest upon Liverpool itself and the areas it will serve—South-West Lancashire and North Wales.

The latest issue of the *Index to the Literature of Food Investigation* (vol. x, No. 4, March, 1939) is published at 4s. 6d. by H.M. Stationery Office on behalf of the Department of Scientific and Industrial Research. It deals with papers received between September 1 and December 31, 1938. Henceforth each annual volume will be issued in four quarterly numbers.

IMPERIAL CANCER RESEARCH FUND

OPENING OF NEW LABORATORIES

The new laboratories of the Imperial Cancer Research Fund at Mill Hill were opened on June 27. They have been built on land leased from the Medical Research Council, whose new building is rising little more than "a stone's throw" away. Close at hand also is the new laboratory for work on nutrition, under the direction of Sir Edward and Lady Mellanby. Thus three great centres of research will be in very close proximity, to the advantage of all the workers concerned. In its early years, from 1902 onwards, the Imperial Cancer Research Fund was housed in the Examination Hall on the Victoria Embankment. In 1912, when the Royal Colleges built a new examination hall in Queen Square, Bloomsbury, the Fund was provided with two top flats, which were then considered comparatively palatial. The experimental research organized by the Fund, however, under its director, Dr. W. E. Gye, has grown to such an extent that the old accommodation became quite unsuitable, and therefore in a country setting—on the borders of Middlesex and Hertfordshire—laboratories have been constructed with abundance of space and admirably designed for the purpose in view.

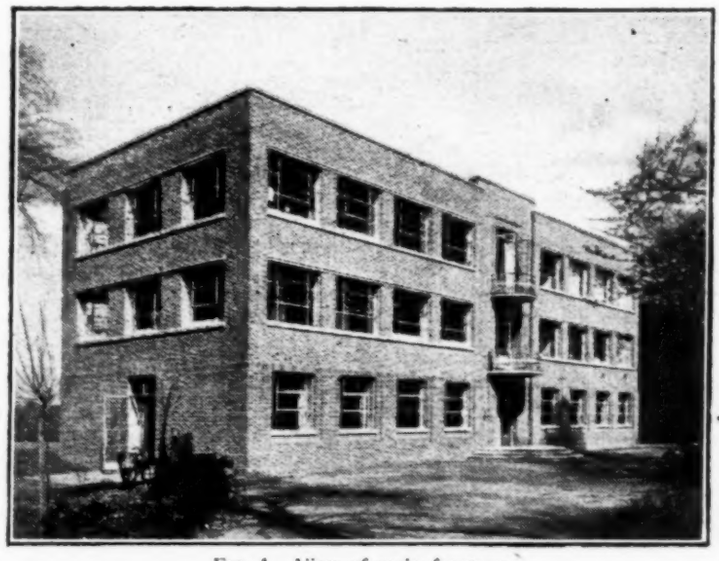


FIG. 1.—View of main frontage.

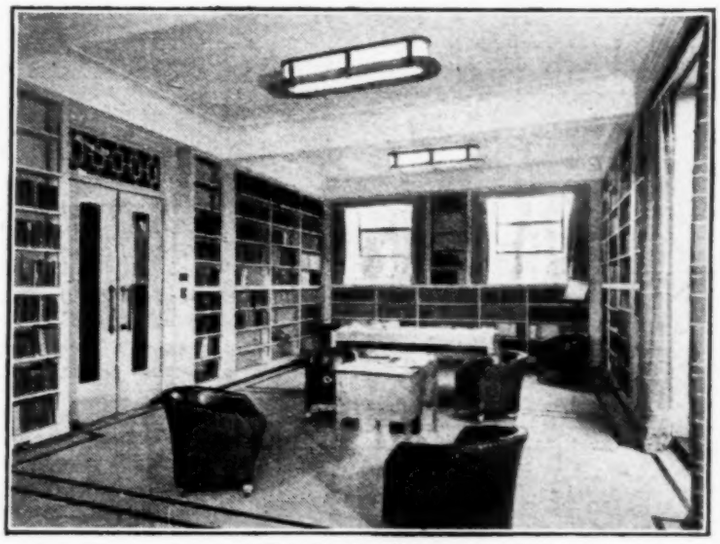


FIG. 2.—The library.

The Opening Ceremony

The official opening of the new laboratories was to have been performed by Viscount Halifax, the president of the Imperial Fund, but at the last moment he was prevented from attending. In his absence Sir HUMPHRY ROLLESTON, chairman of the Executive Committee, presided, and read a letter from Lord Halifax and the speech he had intended to deliver.

In his intended speech Lord Halifax reviewed the history of the work since the foundation of the Fund in 1902, when its first president was the Prince of Wales, afterwards George V. Many famous men had helped the Fund—he mentioned Lord Lister, Lord Balfour, and Mr. Joseph Chamberlain. The Fund had set itself to answer certain general questions, and the answers which had been elicited could, he thought, be succinctly stated as follows: Cancer has been discovered to pervade the whole vertebrate kingdom. It occurs among primitive as well as civilized races. It is not increasing at an alarming rate, nor does the age incidence fall. Cancer is not contagious. Inheritance in cancer has now been investigated by experimental methods, and the latest discoveries have proved that "inheritance" is a word which must be used with great caution. Lord Halifax went on to express thanks publicly to the honorary treasurer, Sir Holburt Waring, for the endless trouble he had taken in supervising the erection of the new buildings. Since he became treasurer in 1933 his services to the Fund had been indefatigable, and in addition to the work on the new laboratories he had been the instigator in applying for a charter of incorporation for the Fund.

"None of us can tell" (said Lord Halifax in conclusion) "what will be the future treatment of cancer, what methods or combination of methods may be established. We only know that it is one of the great scourges of mankind, and that no effort can be too great, no expenditure too prodigal to relieve the coming generations of this affliction. I believe that our objects can be attained, but only by hard work and patient investigation, and it would have been, therefore, with high hope and confidence that, had I been able to be present, I would have declared the laboratories open."

Sir F. GOWLAND HOPKINS then delivered the address on "The Importance of Laboratory Research in the Field of Cancer," which is printed in full at page 1. The vote of thanks was proposed and seconded respectively by the Presidents of the Royal College of Physicians and the Royal College of Surgeons.

Sir ROBERT HUTCHISON said that the address had abounded in experience and wisdom—the wisdom that could only come to a man who had long years of experimental investigation behind him. It was an advantage that that experience had been gathered in a different field from that represented by the new laboratories. One of the results of the increasing specialization of research was that groups of workers felt increasingly isolated from one another, but the lecturer had taken a wider view. He had said quite truly that it was possible that the solution of the problems which were to be investigated in that building would appear along some quite unexpected branch of biological science. For the optimistic view he had taken as to the chances of successful investigation those engaged in the long and patient task would always be grateful.

Mr. HUGH LETT could not help feeling that those who read the address would need no longer to be persuaded

to understand the necessity for experimental research. On behalf of one of the two Royal Colleges which together had originally started the Imperial Fund, and had always taken the greatest interest in it, he thanked the lecturer for his appreciative references.

After tea the laboratories were open for inspection, and a number of demonstrations were carried out. Mr. H. G. Crabtree and Dr. B. E. Holmes demonstrated methods of studying the internal economy of cells; Dr. W. Cramer and Dr. E. S. Horning, the hormonal aetiology of mammary and other cancer; Dr. L. Dmochowski of Warsaw, complement fixation with filterable rabbit papilloma (Shope); Dr. L. Foulds, the production of malignant tumours in guinea-pigs by injections of thorotrast; Dr. R. Knox, the investigation of filterable tumours; Dr. R. J. Ludford, cultures of malignant growths; and Dr. B. D. Pullinger, the minute structure of skin lesions caused by carcinogenic hydrocarbons.

Description of the Laboratories

The laboratory building, which is in a country lane, is surrounded on three sides by trees and approached by a pleasant drive. It consists of three floors, corresponding roughly to a shortened T. On the ground floor are the administrative offices, a large laboratory, and an even larger library. The library, with its three windows looking out over fields, its comfortable arm-chairs, and its charming scheme of decoration, might be considered a place for repose rather than for study were it not that it contains to stimulate the student one of the largest collections of books on cancer in the world. It runs from front to back of the building.

Elsewhere there are a histological laboratory and three chemical laboratories, a small operating theatre, a room for tissue culture work, and perhaps a dozen other rooms equipped for pathologists, bacteriologists, and other workers. The experimental animals are housed at one end of the main building, in large rooms kept at the proper temperature, their hutches or containers being stacked in racks with the maximum of light and air. The normal animals are kept in another building of two floors, with plenty of room for exercise, both in the building itself and in the grass enclosure. The animals include mice, rats, guinea-pigs, rabbits, sheep, goats, chickens and fish.

The walls of the whole laboratory building are cream-coloured and the doors of one-piece walnut. Panel heating has been installed. The floors of the laboratories themselves are of Rhodesian red teak, which is attractive as well as serviceable, while the entrance hall, stairs, and corridor are floored with cream and green rubber covering. A refrigerating plant is attached, and an air-raid shelter is being constructed. There is nothing exceptional about the equipment; it is just what one would expect to find in a laboratory designed for research into the processes of cell life with a view to eliciting the nature and cause of cancer. The whole atmosphere of the place suggests quiet and friendly co-operation—as Dr. Gye expressed it, a place where people get on with their job for the love of it.

The cost of erecting the laboratory has been covered owing to the careful management and thrift of the treasurer of the Fund, Sir Holburt Waring. No appeal has been made to the public, nor have any special gifts been received. The Fund has paid for this new development out of the savings of twenty years. Special acknowledgment is made of the services of the architects, Messrs. Lanchester and Lodge, who have done an excellent piece of work.

LONDON EMERGENCY BED SERVICE

The First Year's Work

The Voluntary Hospitals Emergency Bed Service completed the first year of its work on June 21. During this time it has received 8,310 calls from doctors and hospitals. On October 8 last year a full twenty-four-hour service was established, the previous hours having been from 8 a.m. to 10 p.m., and the Service has been at work ever since. The proportion of night calls to day calls has been surprisingly small, but nevertheless 710 night calls have been dealt with since the night service was started.

Virtually all the London hospitals are combining in the scheme, and the Service has already admitted cases on behalf of some 2,500 doctors. The calls come mainly from London and Greater London, but have also come from as far afield as Lancashire, Lincolnshire, Sussex, and Hampshire. Besides taking cases from doctors, the Service accepts cases from hospitals who wish to dispose of urgent cases when they themselves have a full complement of patients. Over 1,000 beds have been found on behalf of hospitals.

The Service is a means of saving much valuable time for the medical profession. An effort is always made to complete every transaction in five minutes, and, though it may be necessary to telephone more than one hospital before a suitable bed is found, an average of one and a half calls per case was the figure for the whole year. In other words, 50 per cent. of the cases are admitted to the first hospital to which they are offered.

The Service has compiled a list of 102 borough ambulance stations, in order to be able to get in touch with the right garage without delay. Within the County of London the services of the London County Council and St. John are used. During the year 3,191 ambulances were arranged for doctors. In cases of poverty arrangements can be made for an ambulance or taxi at no cost to the patient. In such cases certain hospitals have arranged to pay for the ambulance themselves in order that the patient shall not be kept away from their wards solely on the grounds of finance.

Scope and Method of Service

The Service deals only with the admission to voluntary hospitals of acute cases which are in need of urgent hospital treatment. The term "urgent" is usually defined as "within twenty-four hours," treatment meaning active medical or surgical treatment as against nursing treatment.

The particulars that the Service wants from doctors are simple—just the name, sex, age, and diagnosis. Where ambulances are needed the address and postal area of the patient should also be given. The telephone number of the Service is Metropolitan 8781.

Most of the hospitals are rung twice a day for a return of their vacant beds. These vacancies are recorded on a large board by a system of tickets. The colours of the tickets represent the type of ward, and the shapes show whether the bed is for a man, woman, child, or baby. The board is being constantly corrected and the staff are able to advise doctors as to vacant accommodation in the hospitals which they consider suitable for their patients. The work occupies a staff of twelve, who work in three relays, at 10, Old Jewry, E.C.2. There is a kitchen and rest room attached to the office, as all meals must be taken on the premises.

The Service is financed by King Edward's Hospital Fund for London, and is operated by a joint committee of the King's Fund and the Voluntary Hospitals Committee.

A decree signed by the head of the Association of German Pharmacists announces that in no circumstances are chemists to sell drugs for the regulation of menstruation unless the customer has a doctor's prescription. Non-observance of this rule will be punished by a fine.

In order to reduce the risk of increasing the incidence of venereal disease in Japan by the return of troops, as has occurred in and after former wars, all the Japanese on their return from China are examined in special hospitals and only those found to be healthy are allowed home. One and a half million yen have been allocated for this purpose.

BLOOD TRANSFUSION SERVICE FOR WAR

Experience in the Spanish Civil War has shown that modern war, waged largely from the air, affects the civil population almost as much as it does the fighting forces. Experience in Spain showed, again, that at least 10 per cent. of air raid casualties are seriously wounded and require blood transfusion. It is essential, therefore, to organize an adequate scheme for the supply of blood for the large number of transfusions which might be necessary in war time. Arrangements for supply in the London area are being co-ordinated by the Medical Research Council on behalf of the Ministry of Health. Plans are being made under local arrangements in a number of large towns in the Provinces.

The Metropolis and Home Counties

So far as Greater London and the Home Counties are concerned the arrangements can be divided into two categories:

1. *Sector Arrangements.*—A blood supply officer has been appointed to each sector, whose duty it is to see that each hospital in his sector, especially those in the central area, could be provided with adequate amounts of blood in case of war. For this purpose a number of stations for empanelling donors have been set up and will be open daily from 10 a.m. to 12 noon and from 5 to 8 p.m. from July 3 on six days a week. Volunteers on registration will have their blood tested for determination of the group. Those who are universal donors will subsequently receive a card telling them where to report for withdrawal of blood if or when a national emergency arises.

Volunteers of other groups will receive cards thanking them for their offer of help and letting them know their blood groups, in case they should themselves need transfusion. Blood will be withdrawn from universal donors immediately a state of emergency is declared and stored at temperatures of 2°–4° C. until required. It is reckoned that 100,000 volunteers will be needed in the London area.

2. *Depot Arrangements.*—Experience in Spain showed that the collection and storage of large quantities of blood for transfusion were carried out most successfully in specially equipped clinics with adequate plant for refrigeration and sterilization. Four such depots are being equipped for the supply of London and surrounding areas. They are situated at Maidstone, Luton, Slough, and Worcester Park. Each is being equipped for the storage of about 1,000 bottles, together with the necessary apparatus for collecting and administering blood. Blood will be distributed from these centres to wherever it is needed by means of refrigerated vans. The sites suggested have been chosen because they contain a relatively large population at a reasonable distance from London and are served by a good road system. Each depot is expecting to collect a panel of 20,000 volunteer donors, of whom 8,000 approximately will be universal donors. It is hoped that the depots will be in a position to supply blood a few days after the outbreak of war. About 10,000 donors have already been tested in the depot areas.

With the object of quickly increasing the supply of potential donors not only in the London area but also in those provincial towns where arrangements for a transfusion service are already far advanced, a special appeal for volunteers to attend at local testing centres is being launched on a national scale. Any healthy person between the ages of 18 and 65 is considered suitable to volunteer, and for obvious reasons it is hoped to enrol as many women as possible. The addresses of centres where preparations have already been made for receiving volunteers for blood grouping will be announced in the course of the publicity campaign.

BRITISH HOSPITALS ASSOCIATION WAR EMERGENCY COMMITTEE

The following statement has been received for publication from the British Hospitals Association, 12, Grosvenor Crescent, London, S.W.1.

1. The importance of the part which the voluntary hospitals would be called upon to play in the whole scheme of hospital services in the event of war has been recognized alike by the Ministry of Health and by the hospitals themselves.

2. For some time the London hospitals have had a special committee in close contact with the Ministry of Health, but it is mutually agreed that certain questions which have now to be settled are essentially of a national nature.

3. The British Hospitals Association, which is the only representative body of the voluntary hospitals in the country as a whole, has accordingly appointed a War Emergency Committee consisting of the following:

Mr. O. N. Chadwyck-Healey (*Chairman*).
Mr. George Aylwen, Treasurer, St. Bartholomew's Hospital.
Mr. J. A. Beardsall, Secretary, Addenbrooke's Hospital, Cambridge.
Mr. F. J. Cable, Secretary, Manchester Royal Infirmary.
Mr. R. J. Carless, House Governor, Royal Infirmary, Hull.
Mr. H. Collinson, M.S., F.R.C.S., Leeds General Infirmary.
Lieutenant-General Sir George Cory, Deputy Treasurer, St. George's Hospital, London.
Sir Bernard Docker, Chairman, Westminster Hospital.
Mr. S. Clayton Fryers, House Governor, General Infirmary, Leeds.
Mr. W. M. Goodenough, Chairman and Treasurer, Radcliffe Infirmary, Oxford.
Mr. W. H. Harper, Secretary, Royal Hospital, Wolverhampton.
Professor T. B. Johnston, M.D., Superintendent, Guy's Hospital, London.
Sir Ronald Matthews, Chairman, Sheffield Royal Infirmary.
Mr. R. A. Mickelwright, House Governor, King Edward Memorial Hospital, Ealing.
Colonel H. L. Nathan, M.P., Chairman, Infants Hospital, London.
Mr. C. Max Page, F.R.C.S., St. Thomas's Hospital.
Sir Louis Pearson, Chairman and Treasurer, Nottingham General Hospital.
Sir Harold Pink, Chairman, Royal Portsmouth Hospital.
Mr. W. Rutter, Superintendent, Liverpool Royal Infirmary.
Mr. S. Vernon, Chairman, Birmingham Hospitals Council.
Mr. J. P. Wetenhall, Secretary, West End Hospital, London.
General Sir Kenneth Wigram, Chairman, Cancer Hospital, London.
Major R. P. Woodhouse, Chairman, Hertford Hospital; and Vice-Chairman, British Hospitals Association.
Mr. A. G. L. Ives (*Secretary*).

4. Adaptation and organization are essential if the voluntary hospitals are efficiently to perform the service which would be expected of them in a national emergency, and the primary aims of the Committee are to facilitate this object and by close co-operation to assist the Ministry in every way possible.

The Royal Baths extension at Harrogate, in connexion with the spa development scheme, will be opened by the Lord Mayor of London on Monday, July 10. He will be accompanied by the Lady Mayoress and the Sheriffs of the City of London, together with the Lord Provost of Edinburgh and the Lord Mayors of Belfast, York, Bradford, Leeds, Newcastle-on-Tyne, Nottingham, Kingston-upon-Hull, Leicester, Norwich, and Stoke-on-Trent.

Local News

SCOTLAND

New Glasgow Professor

The King, on the recommendation of the Secretary of State for Scotland, has appointed Charles Frederick William Illingworth, M.D., F.R.C.S.Ed., to be Regius Professor of Surgery in the University of Glasgow in succession to Professor Archibald Young, whose term of office ends on September 30. Mr. Illingworth, who is 40 years of age, graduated M.B., Ch.B. at Edinburgh in 1922. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1925, and in 1929 obtained the M.D. of Edinburgh University, when he was awarded a gold medal for his thesis. In 1924 he was appointed clinical tutor in the Royal Infirmary of Edinburgh, and in 1929 assistant pathologist to that institution. In 1932 he became senior assistant in the surgical service of the Western General Municipal Hospital, and surgeon for tuberculosis to the Edinburgh City Hospital. Since 1936 he has been interim conservator of the Museum of the Royal College of Surgeons of Edinburgh. Mr. Illingworth has made numerous contributions to surgical literature, including a *Textbook of Surgical Pathology* (jointly with Mr. Bruce M. Dick), 1932, now in its third edition.

Glasgow University Graduation

At a graduation ceremony in Glasgow University on June 21 Sir Daniel M. Stevenson, Chancellor of the University, who presided, conferred the honorary degree of Doctor of Laws upon ten recipients, two of whom were members of the medical profession. The Dean of the Faculty of Law, in presenting Dr. Osborne Henry Mavor (James Bridie) for the LL.D. degree, said that while Dr. Mavor was a medical student he had contributed by pencil and pen to the *University Magazine*, and, like another Glasgow student of medicine, Tobias Smollett, his first essay in drama was made at this university when he produced a play for the Mermaid Club. He might be regarded at the present day as Scotland's leading man of letters. Presenting Professor George Grey Turner, the Dean said he occupied a dominant position in British surgery, and held the Bigelow medal awarded to him in the United States. His achievements were recognized all over the world, not only as brilliant pioneer work but as being of great and permanent value.

Laboratory of the Royal College of Physicians

The report for 1938 of the Laboratory of the Royal College of Physicians of Edinburgh, by the Curator, Dr. A. Fergus Hewat, draws attention to the fact that the first book of reports was published in 1889, so that the laboratory has now been active for fifty years. The statistics show that fifty routine reports were sent out in 1890 and 20,592 in 1938. Of the latter number 4,474 were histological, 4,080 chemical, and 12,038 bacteriological. In the research department sixteen workers have been engaged. An analysis of experimental epidemics of mouse typhoid was carried out by Dr. W. O. Kermack and the superintendent, Lieutenant-Colonel A. G. McKendrick. An analysis of mortality rates was applied to the urban and rural districts of Scotland by Mr. R. S. Barclay, Dr. Kermack, and the superintendent, this research having been undertaken as evidence for the Royal Commission on the Geographical Distribution of the Industrial Population. This has shown that in the early half of the nineteenth century health conditions were almost twice as good in the country as in the towns, while in 1931 the towns had almost if not quite caught up on the conditions of the country. It further appeared probable that the towns would continue to gain in this respect over the country in the near future. Cancer in its morphological aspects formed the chief study of the histological department conducted by Lieutenant-Colonel W. F. Harvey, Mrs. E. K. Dawson, and Dr. J. R. M. Innes. This was concerned chiefly with the description and illustration of debatable tumours, upon which four studies were published during the year. In the bacteriological department Lieutenant-Colonel W. Glen Liston studied the trichomonas infections in human beings, a condition which is frequently mistaken for gonorrhoea. Under the supervision of Dr. W. O. Kermack and Dr. W. Tebrich work was continued on the synthesis of compounds of possible chemotherapeutic activity, including various new sulphonamide derivatives. Dr. M. Lichtensteinas continued the research on the action of cod-liver oil in the treatment of wounds, and found that its bactericidal activity was augmented by exposure of the oil to ultra-violet radiation. Some fourteen publications were issued from the laboratory during the year.

IRELAND

The Rotunda Report

The report of the Rotunda Hospital, Dublin, covering the year ended October 21, 1938, mentions a considerable shortage of nurses, brought about by the new training regulations of the Central Midwives Board. To meet this deficiency it was necessary to admit pupil midwives for training without payment of the usual fee, but it is hoped that this measure will only be temporary. Improvements in the hospital during the period under review include the installation of a modern *x*-ray plant near the labour wards, the addition of a pre-natal ward of eight beds, and the provision of a new admission room and some small rooms for private patients. New students' quarters are also in course of construction. Attendances at the pre-natal clinic show an increase of 2,118 over the figure for the previous year; the numbers have risen from 3,870 in 1933 to 12,175 in 1938. An inquiry was instituted into the dietary of patients attending this department, and it was found that among fifty unemployed families only three shillings a week per person was available for food. The dietary of pregnant women in this group was of course hopelessly inadequate, and efforts were made to provide these mothers with extra nourishment. The report concludes with some remarks on ophthalmia neonatorum by Mr. Somerville-Large, the hospital ophthalmologist. Three years earlier the methods of prophylaxis employed had been deemed unsatisfactory and certain modifications were introduced. During the subsequent period, 1936–8, there were no cases of ophthalmia among 8,136 births in the hospital, and only four among 4,983 in the district. These satisfactory figures are partly attributable to the increase in attendances at the ante-natal clinic, and partly to the method of routine prophylaxis employed at birth. The eyelids of the newborn infant are immediately wiped with dry sterile pledgets of cotton-wool. This is followed by the instillation of 1 per cent. silver nitrate by two nurses, one holding the lids apart, the other manipulating the pipette. The solution, kept in a 2-drachm amber-coloured drop bottle with rubber screw-top containing the pipette, is changed every three weeks. Only one case of reaction to silver nitrate is recorded.

According to international statistics the population of the globe at the end of 1937 was 2,134,000,000. Half the population belonged to Asia, exclusive of Russia. Europe had 297,000,000 inhabitants. The most populous European nations were Germany with 79,000,000, Great Britain with 45,000,000, Italy with 44,000,000, and France with 42,000,000.

Correspondence

Problems of Declining Fertility

SIR,—We should be grateful if we might be allowed to draw the attention of your readers to an inquiry into the causes of infertility which is being promoted by the committee to which we belong. These causes have been much discussed of late in Parliament and elsewhere. It will be recalled that the main object of the Population Statistics Act, which came into effect on July 1, 1938, was to throw further light upon this subject.

But there are strict limits to what we may learn from vital statistics. They can tell us nothing, for instance, about how many marriages are involuntarily sterile or sterile by design, or of the extent to which abortion and contraception are practised, or about the numerous motives which restrict parenthood in different regional and occupational groups. These problems can only be clarified by direct inquiry.

A questionary has been prepared by our committee. If filled in on a large enough scale it will yield information which is otherwise unobtainable. It has been designed for the use of doctors, midwives, nurses, and other competent investigators, and has been drawn up on the same general lines as were followed by Professor Raymond Pearl in his comprehensive American inquiry. The committee is anxious to obtain records of the attitudes and experiences of as large a sample as possible of married women in this country, irrespective of age and parity. It would therefore be very grateful if those of your readers who are interested in the problems of declining fertility, or in problems allied thereto, would assist it by sending for copies of its questionary and by filling them in when appropriate occasions present themselves. An honorarium of 1s. per filled-in questionary is offered. A small manual has been prepared which provides guidance in the use of the questionary. Will those of your readers who are interested kindly communicate with the secretary of the committee?—We are, etc.,

EARDLEY HOLLAND
HENRY BRACKENBURY
HORDER
C. P. BLACKER.

Population Investigation Committee,
69, Eccleston Square, London, S.W.1, June 23.

Concussion and War Psychiatry

SIR,—Dr. Emilio Mira's article on psychiatric war experience (*Journal*, June 17, p. 1217) is founded so securely upon personal knowledge that it must be accepted as authoritative. Sometimes, however, the interpretation of personal experience depends upon the method of approach to the subject, and I should like to enlarge upon his note that where amnesia occurred in those near whom a bomb had fallen it generally turned out to be due to organic cerebral happenings.

Some of your readers will remember that shell shock was at first regarded as the physical effect of high explosives upon the central nervous system, and the belief still persists that concussion was a frequent precedent to its development. This belief arose because of the common history of unconsciousness after a shell explosion, which, if accepted at its face value, justified the retrospective diagnosis of concussion. On the other hand, those who used the revival of war memories as a method of treatment soon found that this claim to unconsciousness nearly always represented an amnesia which could be filled in by suitable technique and proved to be a psychological dissociation of a terrifying personal experience. I wrote at the time:

"No distinction can be made on clinical grounds (at the time, that is, when men come for treatment at a home hospital) between those cases described as resulting from concussion and the others where that factor has been absent. The commonly found amnesia for a variable period after the shell shock is rarely due to a concussion, for the memory can usually be recovered by suitable means." (*Psychoneuroses of War and Peace*, Cambridge University Press, 1920, p. 35.)

Further experience in civil life has led me to the conclusion that the post-concussion syndrome, in persons of previously stable make-up, is clinically quite distinct from the medley of psychoneurotic symptoms that followed the supposed concussion from shell fire, and calls for entirely different treatment. This observation increases the importance of accurate aetiological conceptions.

Unfortunately the method of revival savoured of psycho-analysis, at that time a prohibited heresy; not only the efficacy but even the possibility of the method was denied, and by many people the opportunity of putting it to the test was deliberately renounced. Hence one finds now that of two people with past experience of handling war cases one will declare that concussion was a comparatively rare occurrence; another will as confidently assert that it was common, and he will be of those who did not use the revival method.

French clinicians writing on the war—Roussy, L'Hermitte, Babinski, Léri, and others—occasionally referred to amnesias but apparently made no attempt to fill them in, so that their histories of concussion were unreliable. Like Dr. Mira, they freely used spinal puncture and, if my memory is correct, obtained much the same results; but his phrase "organic cerebral happenings" may contain a reservation that these happenings may have had a psychogenic origin—a hypothesis perhaps more acceptable now than it would have been twenty years ago. Dr. Mira in his article did not show familiarity with revival methods and the light they throw upon this post-explosion amnesia, and I write this note so that one little item of knowledge gained during the last war may not be lost.—I am, etc.,

London, W.1, June 22. MILLAIS CULPIN.

The Psychological Factor in Rheumatism

SIR,—May I express appreciation of Dr. R. G. Gordon's valuable contribution to this subject in the *Journal* of June 10 (p. 1165). The relation between "emotional strain" and rheumatoid arthritis has long been known. The author, however, goes further and endorses Swaim's valuable work on this subject. It has been my privilege to have first-hand information of this work, which seems to be little known in this country.

For five years Swaim has carried out a most careful and exhaustive study of the part played by the emotional factors in the natural history of rheumatoid arthritis. He has not merely established an aetiological relationship but has introduced a new therapeutic factor—namely, the development of a "vital faith" in the patient. "When this is achieved," he says, "fear goes, physical improvement follows, and, what is most important of all for the future welfare of the patient, personality change follows. Because of this new spiritual approach to these under-

lying conflicts I have begun to see that I have been missing a great, possibly the greatest, therapeutic force we may ever find." These are very remarkable statements, and merit, I feel, a much wider publicity. Dr. Gordon says that he would unhesitatingly support Swaim's contention that this recovery and freedom from relapse depend in large measure on the patient's degree of emotional stability and the satisfactoriness of his philosophy of life. It would be extremely valuable to know to what extent Dr. Gordon and others are using Swaim's method, and whether any comparable results have been produced in this country.—I am, etc.,

Westminster Hospital, S.W.1, June 21. DONALD COURT.

Chemotherapy of Gonorrhoea

SIR,—The recent articles and letters published in the *Journal* have undoubtedly shown the value of M & B 693 in the treatment of gonorrhoea in the male. General practitioners as a rule treat very few of these cases nowadays, but my experience has shown that results from this comparatively simple treatment have been very successful.

A typical example which came under my care was treated with the drug in doses of two tablets four times a day for eight days, followed by two days' rest. The patient was then given a further course of tablets—one tablet four times a day for six days. No irrigations or other local treatment were administered. The discharge cleared up entirely within four days of commencing this therapy, and the patient was free of any symptom after six days. He was advised to drink plenty of bland fluids, wear a suspensory bandage, and avoid alcohol, etc. When the discharge had ceased the second course of tablets was followed by a series of intradermal injections of gonococcal vaccine.

Whatever treatment is adopted, two things should be stressed—namely, rest and local hygiene. As regards the former, this is not always an easy matter for the patient, especially if he is of the artisan class, but my advice to such patients is to go to bed as soon as circumstances permit after their return from work, thus enabling them to obtain ten or twelve hours' rest in bed each day during the acute stage, with perhaps a still longer period at the week-end. I think it is of paramount importance to explain carefully to the patient the need for protecting the rest of the body from the discharge. One often sees a patient attending with his under-garments stained with obvious discharge, even after he had been warned of the dangers of carrying infection to other parts of the body. I suggest that the patient be provided with cotton bags to which tapes are attached. These could be tied round the base of the penis and the bag removed from time to time.—I am, etc.,

London, W.6, June 17. J. STEIN.

Chemotherapy of Pneumonia

SIR,—Some of the writers of articles on M & B 693 have emphasized the difficulties and dangers associated with the use of this drug, and it was reasonable to suppose that for its successful exhibition there might be required constant supervision by a trained hospital staff, with immediate access to laboratory facilities. Conditions in Public Assistance practice, although considerably better than in Poor Law days, entirely rule out the domiciliary use of serum treatment in pneumonia, but I undertook, along with my colleagues, to test the value of M & B 693 in the area in which we work. All our cases were treated in single-apartment or badly overcrowded room-and-kitchen houses. Although from the scientific point of view it is doubtless desirable to type the pneumococcus in all cases, it is well-nigh impossible to do so in a practice such as ours. Treatment was begun, therefore, immediately the diagnosis was made.

The number of cases treated during the period was twenty-two; the youngest was 8 months, the oldest 81 years. Of these, three were cases of acute lobar pneumonia, two were cases of whooping-cough complicated by pneumonia, and seventeen were cases of bronchopneumonia. All showed a remarkably rapid response to the treatment and the results were uniformly good. In lobar pneumonia the temperature fell in twenty-four hours, while the pulse came down to a rate of 80 within three days. The patients appeared to be well, but signs of consolidation persisted till the usual time for crisis. In all the cases of bronchopneumonia the temperature fell to normal in about twenty-four hours, while the pulse also came to normal in the same period, but the respirations took about fifty-six hours to return to normal.

General treatment was along the usual lines adopted for pneumonia, but all foods and drugs with a high sulphur content were avoided. In one case where the temperature suddenly rose again it was found that instructions had been disregarded and the patient had been given an egg-flip. Phenolphthalein emulsion seemed to be the best laxative. Cyanosis was not common. Nausea was present in a number of cases, but it did not seriously interfere with treatment.

In Glasgow last winter pneumonia and bronchopneumonia tended to be of a rather mild sort, and in any event the number of cases in our series is too small to discuss mortality rates. Our experience, however, seems to suggest that the chemotherapy of pneumonia with M & B 693 need not be restricted to hospital cases and may be regarded as a justification for the undertaking, in the same type of practice as ours, of a trial on a much more extensive scale.—I am, etc.,

Glasgow, June 16. EDWARD N. THOMSON, M.B.

Xenopus Test for Pregnancy

SIR,—In your issue of June 17 (p. 1258) Professor J. W. C. Gunn of the Pharmacology Department at Capetown takes exception to the fact that in a recent publication Professor Crew associates the xenopus pregnancy test with my name. No one sympathizes more strongly than I do with Professor Gunn's desire to see that the University of Capetown should get all the credit due to it. Nevertheless the significant omissions which completely distort the truth about the history of the xenopus test force me to supply relevant information.

1. After I discovered the suitability of xenopus as a test animal for the anterior lobe gonadotrophic secretion, my laboratory undertook an extensive investigation on its relation to metabolic processes. The results (Hogben, Charles, and Slome, 1931) were published as from Capetown after my return to London. While this work was in progress Dr. Zwarenstein expressed a desire to extend our inquiries into the relation of the pituitary to metabolism, and learned my technique of hypophysectomy from me in my laboratory and *not* in the physiological department. Meanwhile tests on pregnancy urine were carried out in my laboratory at Capetown, and when I left it I entrusted, with Dr. Zwarenstein's full knowledge, further inquiry on the practical application of my work to pregnancy diagnosis to two workers then associated with me—namely, Dr. Ariel Goldberg and Dr. David Slome.

2. After returning to London I imported large stocks of xenopus for a renewed attack on the whole problem, and invited Dr. Bellerby to join me in the work. Bellerby started by investigating the reliability of the test for pituitary extracts while collecting material to explore the

pregnancy test throughout the early stages. Meanwhile I had heard that Dr. Goldberg and Dr. Slome were not in a position to carry on with this part of the programme.

3. At that time Dr. Zwarenstein and one of his pupils, Mr. Shapiro, sent to me for publication in this country the first of a series of communications in which they claimed that xenopus was unsuitable as a test animal for gonadotrophic substances because it loses reproductive activity in the laboratory. Although I informed them that our own results were in total disagreement with this finding and that their conclusions were based on defective animal husbandry, I agreed to forward the first of this series for publication; and since no serious claim for the xenopus test could be sustained until the so-called "captivity effect" which Zwarenstein and Shapiro described had been disposed of, Dr. Bellerby began a series of investigations, supplemented later by the work of Mr. Landgrebe, also in my department, with a view to prescribing the precise conditions of diet, density, pollution, temperature, and illumination to maintain xenopus at maximal reproductive activity in the laboratory as a test animal.

4. While these studies were in progress Dr. Zwarenstein came to work for a year in my laboratory and learned during that period how the captivity effect can be avoided by proper management of the animal. He was therefore fully aware of the tests which Bellerby had long ago carried out, as he had been fully aware that Dr. Slome and others of my associates had made preliminary studies on the matter during the period when he had been previously associated with me.

5. Dr. Bellerby's experiments which appeared from my laboratory after Zwarenstein's somewhat precipitate announcement (in the *Trans roy. Soc. S. Afr.*) of his own results on *freshly caught* toads would have been completed at least a year earlier if Zwarenstein had not chosen to endow an exploit in defective animal husbandry with the status of a necessary physiological process. Since Dr. Zwarenstein had not, and never has since, taken the opportunity of withdrawing what he previously wrote about the captivity effect, the claim that he discovered the xenopus test for pregnancy would not be justified by reference to the published record of the work up to that point. Even if it were not true (*a*) that Dr. Zwarenstein became aware that the problem was being worked out in my laboratory while he was associated with its work, and (*b*) that he was kept in touch with what we were doing by correspondence which passed between us and culminated in his own desire to continue his work in my laboratory in London, the fact remains that everything which Dr. Zwarenstein had written about the captivity effect indicated, if it were true, that xenopus could not be used as a test animal.

I have never taken advantage of the mistake which held up the final introduction of the xenopus test for routine work to criticize in detail Dr. Zwarenstein's technique. On the contrary, I welcomed it as a stimulus to inquiries which have made it possible to prescribe more precisely the necessary conditions for using the test, and gave him every encouragement to pursue his own valuable and parallel inquiries, if only because I naturally regard them as an integral part of the programme initiated in my laboratory in Capetown. Since my relations with Dr. Zwarenstein have been friendly throughout, and since I have the highest opinion of Zwarenstein as a research worker, I regret that the intervention of Professor Gunn has forced me to state these facts, which might wrongly suggest that I regard Dr. Zwarenstein's South African note of 1933 as an unprofessional attempt to jump a claim. He did not claim priority in the joint note (*Nature*, 1934, **133**, 762) which appeared after Bellerby's note from my laboratory (p. 494) under his own name and that of his pupil. He specifically refers to the collaboration of Dr. Goldberg and to correspondence which passed between him and my own laboratory.

With regard to the fact that Professor Crew has chosen to use my name in this connexion, I may further add that I have not discussed with him the personal details which Professor Gunn's letter forces me to record. What Professor Crew did know, and Professor Gunn does not know, is that on hearing of the pioneering work on pregnancy diagnosis in Professor Crew's institute I wrote to him immediately after my return to London in 1930, telling him that my own experiments might be interrupted by my new appointment, and sending him a few specimens of xenopus to test. To my certain knowledge preliminary experiments on xenopus were actually carried out in Edinburgh before Dr. Zwarenstein began any work of the kind; and extensive research in Professor Crew's department was restarted only when the very thorough inquiries of Dr. Bellerby had finally disposed of Dr. Zwarenstein's so-called captivity effect.—I am, etc.,

University of Aberdeen, June 20. LANCELOT HOGBEN.

Spinal Anaesthesia

SIR,—Mr. J. Hughes (June 17, p. 1224) has conferred a boon by his masterly report of observations on nearly 1,000 light percaine spinal anaesthetics.

Perusal prompts a few remarks on what is still an "emerging" procedure. First, is it fair to claim for the Etherington Wilson time-diffusion technique that it involves the minimum manipulation? Surely the simplest in this respect is the following method. Puncture the patient in the lateral position, side of incision being uppermost, and with the bridge raised under the waist until the buttock almost lifts from the table. Enter at the L. 2–3 interspace. After two minutes with the spine tilted at 5 degrees head up, the table is lowered to 10 degrees Trendelenburg. The patient is never moved if it is a kidney operation and only once for a laparotomy, when, after the bridge is lowered to within two inches of the table, he is gently rolled over on his back. Simplicity is important, for it aids safety. This gives a perfect abdominal paraplegia, and never is more than 12 c.cm. needed. Secondly, regarding dosage, 10 c.cm. is often adequate for the abdomen and in poor risks; after this amount is injected I leave the needle *in situ*. If in two minutes the level of anaesthesia is high enough the needle is withdrawn. Otherwise 2 c.cm. more is administered. Thirdly, the spinal route is beneficial even in infancy, and I always use it for emergencies like acute appendicitis if there is any concomitant "cold" or pulmonary affection. Most little ones, down to four or five years, respond surprisingly well to gentle persuasion and prefer a prick to the more memorable suffocative sensations of inhalation. Fourthly, his occasional complete failure is an old spinal bogey which I prefer to explain by imperfection in thecal puncture. When this occurred recently I gave a second 12 c.cm. ten minutes later and normal paraplegia followed. That varying degrees of susceptibility occur is in accord with response to drugs in general, but as we "never" meet with such complete percaine resistance in local anaesthesia why should 0.5 per cent. fail intraspinally? The only obvious difference between spinal nerve roots and peripheral nerves is difference of accessibility to the injection.—I am, etc.,

Bristol, June 25. A. WILFRID ADAMS.

Anaesthesia in War Time

SIR,—The letter of Dr. J. Blomfield in your issue of June 10 (p. 1200) castigating a very simple and efficient anaesthetizing apparatus described by me filled me with amazement. Apart from its rudeness, it chides everyone who attempts to invent or improve any sort of surgical apparatus.

I am an ear, nose, and throat surgeon, not an anaesthetist, but I do congratulate the anaesthetists who have developed their apparatus to its present state of efficiency without the help of Dr. Blomfield.

I happened to be in Paris last week and saw at the St. Louis Hospital an operation for excision of the upper jaw. The anaesthetic was given by an apparatus very similar to the one I described, and a very perfect anaesthetic it was. The apparatus I described was based on one I saw in Paris fifteen years ago. Perhaps Dr. Blomfield is unaware that this type of anaesthesia is largely used in Paris for nasal operations, and the apparatus has shown no signs of being turned over to the museum of the École de Médecine. What amazes me most is that anyone should abuse and scorn something which they have never seen working. I have used this apparatus for nose and throat work in a large number of cases during the last fourteen years and am convinced of its value. The hundreds of surgeons and anaesthetists who have used an auto-anaesthetizing apparatus are in a better position to judge of its value than Dr. Blomfield.—I am, etc.,

Guildford, June 19. T. B. JOBSON.

Morphine Injections at First-aid Posts

SIR,—With reference to the letter of Dr. Philip Hamill on this subject in the *Journal* of May 20 (p. 1054) it would appear that the common fear of the risk of overdosage of morphine in severe pain and traumatic shock has no clinical basis.

Professor A. J. Clark in his *Applied Pharmacology* (sixth edition, p. 240) states that "doses of morphine above 1½ grains produce toxic effects which are often fatal." It is, however, to be assumed that this has reference to the administration of an undivided dose of this amount in the absence of severe pain or traumatic shock, since it is, or should be, well known that in such circumstances much larger doses of morphine, in aggregate, than this can be borne with impunity, and that it is impossible to kill a patient with morphine (using frequently repeated doses of 1/4 to 1/3 grain) *until pain has first been completely overcome.*

In his letter in the same issue of the *Journal* (p. 1053) on the prevention and treatment of shock, Mr. N. L. M. Reader recommends from personal experience the use of full doses of morphine as "the first measure of anti-shock treatment" when for any reason spinal anaesthesia is inapplicable. In this connexion I may appropriately record a personal experience of my own. Not long ago I was called upon to render first aid to an aviator who had crashed and was suffering from burns of the third degree of both hands, as well as from shock. His hands were completely flayed and bleeding, and he was in extreme pain and bordering on collapse. To this patient I administered 1/2 grain of morphine subcutaneously forthwith, and thereafter 1/4 grain as often as he reported the return of pain, which was approximately every quarter of an hour, 2½ grains of morphine in all being administered to him over a period of two and a half hours. He was then transferred to hospital (smoking with assistance a cigarette), where he was reported to have arrived "in very good condition," and subsequently made a satisfactory recovery.

While indiscriminate use of morphine in first-aid posts is not advocated, I contend that in severe pain and traumatic shock there is much greater danger to the patient from under- than from over-dosage of morphine.—I am, etc.,

Capetown, June 12. J. WALKER TOMB.

Evacuation and Immunization

SIR,—The arrangements that are being made for the evacuation of children to safety zones in the event of a national emergency raise the question of the possible consequences of collecting large numbers of children under conditions that may be conducive to the spread of epidemic diseases. Obviously nothing will be left undone to avoid any such contingency, but a second line of defence might well be built up by protecting individually as many children as possible against diphtheria by the process of passive immunization.

Some indication of the effectiveness of this protective measure is afforded by the figures regarding the results of diphtheria immunization in Guernsey, as given by Sir Samuel Hoare in the House of Commons on June 8 (*Journal*, June 17, p. 1264). This report does not indicate the respective numbers of children immunized and not immunized to which the figures of cases and deaths refer, and I have no information on this point. But the Guernsey figures published in February, 1939, although from a purely statistical standpoint not absolutely satisfactory, are sufficiently clear to confirm the impression conveyed by the other evidence. Of 3,000 immunized children, twelve developed diphtheria in a mild form. Among 7,000 children who were not immunized there were 271 cases of diphtheria.

It has to be recognized that at present only about 6 per cent. of children in London are actively or passively immune to diphtheria, and that the induction of passive immunity takes several months. It would therefore seem desirable that if the full benefit of the protective measures available against diphtheria is to be obtained passive immunization of children, both of school age and below it, should be undertaken at this stage. Any attempt at carrying out this procedure at a moment of crisis will not only impose a great strain on the available personnel but will also be devoid of immediate results.

Diphtheria immunization is a measure that has become progressively more popular during the last few years. Under existing conditions it appears essential that the benefits of diphtheria immunization should be made known more widely and that the facilities for carrying out this work should be increased. In fact, something in the nature of a mass campaign appears to be an immediate necessity.—I am, etc.,

London, E.5, June 19. MAX SORSBY.

Psychiatric Syndromes in Myasthenia

SIR,—In the *Journal* of May 27 (p. 1111) your correspondent Dr. R. N. C. Smith inquired as to the possibility that the patient in Case II of my article "Psychiatric Syndromes in Myasthenia Gravis," which appeared in the *Journal* of May 13, might have been suffering from susceptibility to the alkaloid atropine during his psychotic state.

I would like to say that before admission of this patient to the mental hospital he had received atropine sulphate 1/200 grain hypodermically on just one occasion, two days

previous to the onset of his psychosis, and so it is felt that this drug had no aetiological significance in the precipitation or causation of the condition. The patient's total reaction did not resemble that of a toxic confusional state, but had all the characteristics of a manic-depressive reaction type, manic phase. During his stay at the mental hospital he received only one dose of atropine sulphate a day—1/200 grain, hypodermically.—I am, etc.,

RALPH T. COLLINS, M.D.

Jordanburn Nerve Hospital and
Psychological Institute, Edinburgh. June 22.

Liver Atrophy

SIR,—I was very interested to read the report of a case of liver atrophy by Drs. W. M. Millar and Jack Park in the *Journal* of June 24 (p. 1284), as it confirms the conclusions I reached in writing an M.D. thesis on acute yellow atrophy of the liver.

These conclusions were:

1. That liver atrophy is an ultimate product of a metabolic disturbance which may arise under a variety of different circumstances and be due to several aetiological factors.

2. That one of the most important causative factors common to the majority of cases is deprivation of food and fluid, often by vomiting. When this is present the effect of any potential liver cell poison is enhanced, hence the grave effects after even small doses of such agents as chloroform.

3. That in the treatment and prophylaxis of liver atrophy the early use of glucose and fluids, especially intravenously, is of paramount importance.

In the case referred to above vomiting and presumably a prolonged period on low diet seem to have been a feature, though its importance has escaped emphasis. The prompt and vigorous treatment with intravenous fluids and glucose in this case undoubtedly saved the patient's life and prevented the appearance of the grave nervous symptoms associated with acute liver necrosis. While agreeing with Drs. Millar and Park's suggestion that the anaesthetic be chosen with care in any operation on a morphine addict, I would further suggest that preoperative intravenous glucose would be a valuable prophylactic measure whatever the anaesthetic, and especially in those cases where diet has previously been low and vomiting has occurred.

Finally, though I am not questioning the diagnosis in this case, may I point out that the presence of amino-acids and cholesterol in the urine is not conclusive evidence of liver destruction. These substances can and do occur in the urine in other conditions besides liver atrophy, and are often absent even in fatal cases of acute yellow atrophy, though their presence does suggest impairment of liver function.—I am, etc.,

ERIC TOWNSEND, M.D., D.P.H.Ed.

Bournemouth, June 25.

Pelvic Disproportion

SIR,—In reply to Mr. Norman Reece (*British Medical Journal*, June 24, p. 1304) I should like to point out that he has misquoted the biparietal diameter. In my letter (June 10, p. 1202) he will see that by *x*-ray measurement this diameter was 3.3 inches approximately and not 3.65 inches as he has stated. I should like further to support Professor J. M. Munro Kerr (June 24, p. 1303) in his stand for "trial of labour" by citing yet another case of pelvic disproportion with which I had to deal shortly after the one reported in your columns. It is interesting if only on account of the patient's age.

A primigravida, single, aged 47, had the following external measurements: interspinous 10½ inches, intercristal 11 inches, external conjugate 7½ inches. Her height was 4 feet 8 inches. There was considerable uncertainty about her dates. On May 11 I examined her under an anaesthetic. The head was floating and I could not make it fix in the brim. The diagonal conjugate was 4 inches and the whole of the pelvic brim could be easily felt. The ischial spines were prominent and the sacro-spinous ligaments in length equalled the breadth of two fingers. I decided to enlist the help of a radiological colleague. Stereoscopic pelvimetry was done on May 20, with the following report: "Position of head: L.O.A. flexion poor, free, suboccipito-bregmatic 3¼ inches. True conjugate 3½ inches, transverse 5 inches, obliques 4 inches, interischial 4 inches. Sacrum rather forward. Description of pelvis: small android pelvis. Forecast of labour: Caesarean section elective." Again I decided to allow labour to start of its own accord. On May 31 the membranes ruptured spontaneously and pains started shortly after. An hour later the head was fixed in the brim and normal delivery of a 7 lb. 4 oz. baby was completed five and a quarter hours after the onset of labour.

I can only agree with Mr. Reece when he says that the outcome of labour in these cases is a clinical problem. No matter how arithmetically accurate a radiologist may be, he cannot foretell or assess what the power of the uterus, the degree of moulding and flexion will be in labour.—I am, etc.,

London, W.1, June 26. W. C. W. NIXON.

SIR,—Professor J. M. Munro Kerr's contribution to this discussion is unfortunately important, because his word rightly carries so much weight.

For me his letter (*Journal*, June 24, p. 1303) destroys only a dummy which has been lying flat for some years, and at which I, too, have done some target practice. His search of the literature is bound to be in vain, for there is no "body of obstetricians" in any country as yet who have performed a series of inductions based on cephalometry. The discredited work in this and other countries was based first on clinical findings alone, and later in some cases on clinical findings plus pelvimetry. Further, the method of induction was mainly by tube, bougie, etc., which are, or should be, now entirely displaced by rupture of membranes.

Induction not based on cephalometry is utterly unjustifiable. The object of induction is to be sure of a plastic head of slightly reduced size. Cephalometry offers the only certainty. I have evidence that such controlled series are now being carried out, and I believe that the "tenacity" in this cause will triumph over hitherto justified conservatism. Is not Professor Munro Kerr fighting to capture a position from which all but a few have retreated? I ask only for a fair trial of a new procedure, and am willing to be routed if the results do not justify the method.—I am, etc.,

Bexhill-on-Sea, June 24. L. NORMAN REECE.

Curability of Cancer

SIR,—In your issue of June 24 (p. 1301) no less an authority than Dr. J. Ralston Paterson is quoted as having said that there were only four "curable" types of cancer—of the breast, mouth and lip, skin, and uterus. Surely carcinoma of the rectum satisfies all the criteria of "curability" propounded by Dr. Paterson? It is diagnosed with fair ease in its early stages, and adequate treatment—though the indications for radiotherapy are almost *nil*—offers a reasonable expectation of cure. I think also that the colon should be included in the list, though its ease of diagnosis is more open to question.—I am, etc.,

London, N.6, June 24. R. L. BENISON.

Adult Serum in Measles

SIR,—Dr. L. R. Lempriere's paper (*Journal*, June 3, p. 1136) and Mr. J. Whittingdale's letter (June 17, p. 1259) prompt me to mention an outbreak of measles at Sutton Valence School in May, 1938. There were forty-two cases out of a total of fifty-two non-immunes. No serum was available for prophylaxis; no complications whatever ensued, not even a bronchitis, although more than half the cases had temperatures of 103° F. and over at the time of the appearance of the rash. From this admittedly small outbreak I am inclined to agree with Mr. Whittingdale's opinion that 1938 measles has not been a fair test for the value or otherwise of serum prophylaxis.—I am, etc.,

Maidstone, June 25. JOHN SMITH.

Control of Functioning

SIR,—Dr. Peter Macdonald's letter in your issue of June 17 (p. 1259) on the discoveries of F. Matthias Alexander is a very important one. It is so because it makes known that the independent work of Professor G. E. Coghill, which, in his own words, covered "over forty years of neurological study which has been directed consciously towards the problem of psychology," led him to the discovery of "the same scientific principles" in working "on lower forms" which Alexander discovered "through practical work with human beings." This substantiation of the reality of principles of living processes discovered by Alexander removes Alexander's discoveries from the sphere of personal quality he may possess, or be charged with possessing, to the extra-personal sphere of scientific law. It appears now to be the responsibility of scientific medicine to trace within the fabric of its accumulated knowledge wherein that knowledge is an expression of these principles, and to reject all other conceptions which do not bear that stamp. This may seem a large claim, but it is not too large when Alexander's discoveries are envisaged. Although readily accessible, the number of both medical men and laymen who are familiar with his work is extremely small, and it is necessary to cite briefly what these discoveries are.

The first is the principle of primary control of the living mechanism, a relation of the head to the neck in use. This is a means whereby integration and co-ordination of the whole creature are secured and whereby all uses of all parts become an expression of the use of the whole. Primary control is also a kinaesthetic experience whereby a reliable kinaesthesia is established within the creature with all that that connotes. The principle of primary control is the principle of normality because it is the principle of living processes common to all men and to all animals. Flowing from the discovery of primary control are the subordinate discoveries of the physiology of respiration, the physiology of locomotion, and the physiology of the hand.

His second great discovery is the principle of the sub-ordination of ends to means, which is a principle whose application in all spheres of human activity knows no bounds.

—I am, etc.,

Bolton, Lancs, June 19. MUNGO DOUGLAS, M.B.

The Abortion Report

SIR,—In your leading article in the *Journal* of June 17 (p. 1236), commenting on the report of the Interdepartmental Committee on Abortion, it is stated that "another means of prevention [of abortion] obviously is the practice of approved methods of contraception under medical supervision." Recent American experience as given in statistics from Chicago and New York directly contradicts this—they show a distinct association between contraception and abortion. This agrees with the conclusions I have formed in my own experience, and, indeed, seems what might reasonably be expected. "Further dissemination of contraceptive knowledge" is surely superfluous in an age when adolescents just out of school—or while still at school—seem to have a sound working knowledge of the subject. Abortion is a serious problem, but I suggest that it is not "obvious" that the solution is to "cast out Satan by Beelzebub."—I am, etc.,

Darwen, June 20. R. C. WEBSTER.

Obituary

SIR JOHN BAKER, M.D.

Late Medical Superintendent, State Criminal Lunatic Asylum, Broadmoor

We regret to announce the death on June 13, after a short illness, of Sir John Baker, formerly Home Office expert in lunacy, and for ten years medical superintendent of the State Criminal Lunatic Asylum at Broadmoor in Berkshire.

Born on October 2, 1861, he was educated at Marischal College, Aberdeen, and graduated M.B., C.M. of Aberdeen University in 1883, proceeding to the M.D. degree in 1901. Soon after qualification he became assistant medical officer at the Dundee Royal Asylum, and after three years joined the medical staff at Broadmoor. Entering the Prison Medical Service in 1888 he was assistant medical officer in turn at H.M. Prisons at Portland and Pentonville. In 1898 he acted as secretary of the Departmental Committee on Prison Dietaries, returning not long afterwards to Broadmoor as deputy medical superintendent. From 1910 until 1919 Baker was medical superintendent of Broadmoor. The last few years were a time of exceptional strain for him, as for many others. In addition to his heavy duties at the State Criminal Lunatic Asylum, with a depleted staff, he had charge of insane German prisoners of war in the neighbouring Crowthorne War Hospital. On his retirement several years before the usual age he was created a Knight, and went to live at Southsea. He then moved to Camberley, not far from Broadmoor, and made his home in Park Road.

As a Home Office expert in lunacy Baker had taken part in statutory inquiries on convicted murderers ordered by the Secretary of State under the Criminal Lunatics Act of 1884. He was the author of articles on kleptomania and pyromania in Tuke's *Dictionary of Psychological Medicine* (1892), and of a number of papers published in the *Journal of Mental Science* between 1896 and 1904; the subjects included records of cases of pyromania, points connected with criminals, general paralysis and crime, and insanity in English local prisons. He also contributed a memorandum on alcoholism and crime to the *Bulletin de la Commission Pénitentiaire Internationale* in 1900.

Sir John Baker belonged to the British Medical Association from 1888 until some time after his retirement from active work. He is remembered by old associates at Broadmoor and in the Prison Medical Service as an able and conscientious administrator, devoted to his work, and a kind and loyal colleague.

Mr. WILLIAM HERN, O.B.E., who died at Beaconsfield, Bucks, on June 9, aged 82, had been a member of the British Medical Association for fifty-five years. The second son of John Hern of Ashburton, he went first to Ashburton Grammar School, and then to the Middlesex Hospital and the Royal Dental Hospital, where he held

the Saunders scholarship. In 1881 he obtained the diploma L.D.S., and in the following year qualified M.R.C.S. He had held the posts of dental surgeon, lecturer on dental surgery, demonstrator in pathology, and house-surgeon at the Royal Dental Hospital, and during the war was honorary consultant dental surgeon to the London military hospitals. For his war services he received the O.B.E. in 1920. He was for many years dental surgeon to the Middlesex Hospital, and on retirement from the active visiting staff was elected consulting dental surgeon to that institution. Mr. Hern's distinguished work in the practice and teaching of dentistry led to his appointment as vice-president of the Section of Odontology at the Annual Meeting of the British Medical Association held in London in 1910. He was a Fellow of the Royal Society of Medicine and one of the oldest members of the British Dental Association.

The following well-known foreign medical men have recently died: Professor SERAFINO BELFANTI, director of the Institute of Serotherapy at Milan; Geh. Reg.-Rat Professor LUDWIG HAENDEL, for many years director of the Bacteriological Department of the Health Office of the Reich, aged 70; Dr. H. V. HAYEK, professor of social medicine at Innsbruck, aged 59; and Dr. CHARLES RUPERT STOCKARD, professor of anatomy at Cornell University Medical College, New York, since 1911, managing editor of the *American Journal of Anatomy* and editor of the *Journal of Experimental Zoology* and *American Anatomical Memoirs*, aged 60.

Universities and Colleges

UNIVERSITY OF OXFORD

At an Encaenia on June 21 the honorary degree of D.Sc. was conferred on Sir Edward Mellanby, M.D., F.R.S., Secretary of the Medical Research Council.

The John Malcolm Mitchell Scholarship of £80 will be vacant in October, 1940. It is offered for one year in the first instance, with a prospect of renewal, and is designed to help the daughter of a professional man. The syllabus of the examination, which is to be held in December, may be obtained from the Principal, Lady Margaret Hall, Oxford.

In Congregation on June 22 the following medical degrees were conferred:

D.M.—H. M. Sinclair, V. H. Brink.
B.M.—D. L. P. de Courcy.

UNIVERSITY OF CAMBRIDGE

The following candidates have been approved at the examination indicated:

FINAL M.B.—*Part II (Principles and Practice of Physic, Pathology, and Pharmacology)*: P. S. Adler, R. H. Armin, J. Aspin, D. M. Baker, G. C. Barron, J. R. Bolton, J. F. Buchan, J. H. Burkinshaw, D. L. Caldwell, M. A. X. Cochemé, R. I. G. Coupland, O. J. Curl, J. H. Dean, A. P. Dick, H. J. Dismorr, K. C. Dixon, R. H. Elphinstone, J. F. Erskine, T. Fenwick, A. D. Fisk, W. J. D. Fleming, C. M. Fletcher, R. Fletcher, J. H. P. Gauvain, T. C. N. Gibbens, M. O. J. Gibson, O. D. Gilmore, J. A. Glover, I. R. S. Gordon, G. S. Graveson, A. Hargreaves, G. W. Harris, K. M. Hay, J. M. Holford, P. W. Isaac, I. M. Jackson, W. H. Kirkaldy Willis, G. M. Lewis, J. A. Lorimer, F. M. McGown, K. S. MacLean, P. D. MacLellan, J. E. M. Melville, N. E. Monteuuis, E. P. Morley, J. M. Naish, J. C. B. Nesfield, R. O. G. Norman, J. C. R. Nuttall-Smith, A. M. Ogilvie, L. D. Osler, J. N. Pattinson, J. H. Penrose, C. P. Petch, A. Ponder, B. W. Powell, L. M. Reid, W. H. S. St. John-Brooks, P. D. Samman, P. D. Scott, J. R. Squire, A. Standeven, A. J. S. B. Tawse, P. S. Thorne, J. S. H. Wade, H. R. E. Wallis, W. H. C. Watson, G. C. Wells, H. W. Whittingham, R. Wilson, P. N. Witney. *Women:* G. M. Allen-Williams, N. G. Clegg, W. F. Holman, R. M. Howitt, A. M. Lewis, M. Savory, M. J. Scott.

UNIVERSITY OF LONDON

At a meeting of the Senate, held on June 21, Viscount Dawson of Penn, who had hitherto been a representative of the Faculty of Medicine on the Senate, was appointed as a co-opted member in place of the late Sir Frank Dyson.

Mr. Harry Stobie, L.D.S., R.C.S., M.R.C.S., L.R.C.P., was appointed to the University Chair of Dental Surgery and Pathology tenable at the Royal Dental Hospital of London School of Dental Surgery, from October 1.

Mr. P. H. Mitchiner, M.S., F.R.C.S., was appointed Governor of the Imperial College of Science and Technology in the vacancy caused by the death of Sir Frank Dyson.

UNIVERSITY OF BRISTOL

The following candidates have been approved at the examinations indicated:

M.D.—Constance I. Ham.

FINAL M.B., CH.B.—*†‡Dorothy M. Shotton, *†C. A. St. Hill, Dorothy M. Ayre, P. A. Bennett, A. A. K. Datta, ‖Marjorie O. Dunster, J. L. Emery, Emily G. Hamlyn, †‖Betty F. Hannaford, F. R. Hurford, N. E. Melling, †Jeannette D. Shed, S. J. Silvey, P. R. H. Slade, Sylvia E. Smith, T. H. White.

* With second-class honours.
† With distinction in Public Health.
‡ Distinction in Forensic Medicine and Toxicology.
‖ Distinction in Surgery.

UNIVERSITY OF WALES

WELSH NATIONAL SCHOOL OF MEDICINE

The Council of the School on June 23, on the recommendation of the Senate, appointed Dr. F. R. Magarey and Dr. H. D. Davies Demonstrators in the Department of Pathology and Bacteriology for a period of two years from July 1 and October 1 respectively, and Dr. T. E. D. Beavan and Dr. Emily K. Williams Junior Assistants in the Medical Unit for a period not exceeding two years from October 1.

The following candidates for the degrees of M.B., B.Ch. have satisfied the examiners at the examinations indicated:

OBSTETRICS AND GYNAECOLOGY.—R. T. Bevan, Mary E. Budding, Doreen M. E. Cranch, Joan B. Davies, G. C. D. Evans,* I. L. R. Evans, A. B. J. Hill, Helen C. Hodges,* D. H. Jenkins, R. T. Jenkins, J. V. Jones, H. L. Lloyd, Mary E. Lloyd, S. Love, Brenda M. Mead, R. E. Packer, Mary G. Powell, D. C. Taylor, C. E. Thomas, T. Walker.

PATHOLOGY AND BACTERIOLOGY.—Enid Curran, Hilary N. Davies, N. E. France (with distinction), Vera Harris, Margaret W. Hughes, D. F. V. Johnston, Gwenllian M. Lewis, J. W. Morgan, J. B. Randell, H. I. Rees, Nest G. Richards, Barbara C. Roberts, Erica M. G. H. Roberts, J. H. Stranger, E. R. Treasure, Glenys J. Wade.

* With distinction.

QUEEN'S UNIVERSITY, BELFAST

The following candidates have been approved at the examinations indicated:

M.D.—C. C. Ryan (with commendation), W. P. Berrington, J. Dolan, W. J. Dunn, N. S. Martin, C. J. Patel, C. R. C. Rainsford, J. Reynolds, R. F. Strong.

M.B., B.CH., B.A.O.—*W. McK. Bonnar, *Elizabeth A. B. Garrod, *Helen S. Jackson, *J. S. Logan, *B. E. McConnell, *J. F. Pantridge, *A. S. Ramsey, *D. H. Sinanan, *W. St. C. Symmers, Annie E. Addison, R. G. Allen, D. McK. Anderson, R. W. R. Atcheson, R. H. Baird, J. M. Barber, R. J. E. Bell, A. M. Blackstock, H. J. Bradshaw, F. G. Cairns, R. Calwell, A. F. Crook, Averell S. Darling, B. Deeny, E. Donnelly, D. A. Draffin, J. G. Fee, R. J. L. Ferris, T. E. Field, J. Finnegan, E. Fletcher, H. W. Gallagher, Marion R. Gaston, W. McL. Gillespie, B. P. Glancy, Annie F. Graham, T. J. Graham, J. Hanna, J. L. Henry, S. J. Hepworth, Georgina Hill, H. S. Hogg, W. B. Jamison, J. C. Johnston, R. Kells, K. R. Kennedy, C. Kirk, Anna E. Kyle, J. B. Kyle, W. J. Lynd, G. McAnallen, P. M. McAuley, C. A. McCleary, J. McClintock, L. H. McGrath, B. McHenry, J. S. Martin, Elizabeth O. Mawhinney, I. B. Millar, J. E. Moss, G. A. Mullan, C. R. Murdock, G. D. Murphy, C. W. Musgrave, D. F. D. O'Neill, Irene Park, J. P. C. Purdon, R. A. Pyper, J. H. Redding, C. D. Ross, W. Shanks, W. H. T. Shepherd, H. E. Smith, H. T. Stewart, T. Sullivan, J. McA. Taggart, H. B. Thomson, N. H. Wass, M. McC. Weir, W. Wilson, O. G. Young.

* With second-class honours.

INTER-COLLEGIATE SCHOLARSHIPS BOARD

The following awards of medical entrance scholarships and exhibitions have been made on the results of the London Inter-Collegiate Scholarships Board examinations:

UNIVERSITY COLLEGE.—*Bucknill Scholarship:* Miss A. Palmer. *Entrance Scholarship:* I. R. Gray. *Medical Exhibitions:* Miss P. M. Lloyd, R. H. Shephard.

KING'S COLLEGE.—*Warneford Scholarships:* H. A. L. Latta, J. A. Hanraty. *Sambrooke Scholarship:* R. L. M. Ferrari.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.—*Science Scholarship:* G. Grant.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.—*Entrance Scholarship:* L. I. Hatherley.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—*A. M. Bird Entrance Scholarship:* P. H. Eversleigh. *Mabel Sharman-Crawford Scholarship with a Mrs. George M. Smith Scholarship:* N. Hewitson. *Mrs. George M. Smith Scholarships:* D. A. Chapman, M. J. M. Flach. *St. Dunstan's Medical Exhibition:* J. F. Tucker.

Medical Notes in Parliament

In the House of Lords on June 27 the Marriage Bill, the Local Government Amendment (Scotland) Bill, and the Unemployment Insurance Bill passed through Committee. The London Government Bill was read the third time.

The House of Commons has this week examined the Civil Defence Bill in Committee, and the House has been in Committee on the Finance Bill. The new tax on armaments profits was approved.

Declining Population

Lord SAMUEL in the House of Lords on June 21 called attention to the prospective decline in the population. He recalled the prediction of Malthus that population if unchecked would outrun subsistence, but the situation was now changed. The application of science to agriculture had relieved mankind of anxiety on the score of scarcity of food. At the same time means had been discovered to control the birth rate, with the result that the increase of population was now checked and would soon be replaced by a decrease. Scotland had almost a stationary population. In England and Wales in 1891 the number of live births per 1,000 women between 15 and 45 was 129.8; at the 1931 census that number had fallen to 64.3. In 1891, of married women between those ages in any particular year one out of every four would give birth to a child. In 1931 only one in eight gave birth to a child in any particular year. As a counterbalancing factor the strenuous efforts made by the State, by local authorities, and by the medical profession to reduce the death rate had phenomenal success, and whereas in 1891 it was 19.7 per 1,000 it was now in the neighbourhood of 12.4. In 1901, 140,000 infants, or 1 in 7 of children born, died under 12 months; that number was now 35,000, or 1 in 16 of all births. Migration was another counterbalancing factor. But they did not offset the fall in the birth rate. The population of England and Wales was 41 millions, but it had been estimated that by 1970 it would be reduced to 30 millions. Another estimate showed that the decline would begin in 1941 and by the end of this century the population of England and Wales would be 20 millions, of whom 46 per cent. would be over the age of 60.

FAMILY ALLOWANCES AS REMEDY

The decline was due to deliberate, conscious human action. Over a large part of the population that action was due to poverty or to fear of poverty and to the burden imposed on working-class income by a large family; there was also the question of housing. So far as the economic aspect was concerned the most effective remedy was the institution of family allowances as part of or supplemental to the wage system of this country. That principle was recognized in the Metropolitan Police Force. The Royal Commission on Coal of 1926 unanimously recommended a system of family allowances in the coal industry and several large industrial firms had introduced them. Child-bearing should be made as safe, painless, and inexpensive as possible for every mother. The removal of the marriage bar in certain occupations deserved consideration, and relief for wives and children under income-tax regulations might be further extended.

Lord SNELL remarked that the war robbed the country of something like a million potential fathers. It was possible that some influence was exerted on the birth rate by the increased number of women in the professions and industry; those women might prefer a career to a home and family. Regarding some of the allowances, trade unions felt that the same results could be achieved with fewer dangers through an extension of social services, through the supply of free meals and milk, by rent rebates to large families, and by extension of the personal reliefs under income-tax regulations. They thought that cash payments for children for the first year or two would help and that healthy homes at cheap rents would have a decisive influence.

LORD DAWSON ON ANXIETY CAUSE

Lord DAWSON said if it were true that the quantity and the composition of the population were deteriorating it almost covered schemes of social betterment with a sense of futility. The quality of the people born had become a matter of first-rate importance, but the fall in the population was too great even if they were satisfied with the quality. At the peak year of 1880, 100 women during their fertile period produced 150 girl babies; to-day 100 women produced only seventy-six girl babies or future mothers; in fact this country had failed to reproduce itself since the year of 1925. The curve of the decline had flattened a bit during the last two or three years, and he hoped that was a portent of a better state of things. In 1881 the proportion of people over 60 compared with the people under 20 was 1:6; in 1931 the proportion was 1:3, and next year for every person over 60 there would be only two under 20. Already there was more accommodation in the schools than children to fill it. These figures were alarming, and unless there was a different plan with regard to children and families we could hardly expect much change.

There was no evidence of any mass tendency to reduce fecundity, though features of modern life did perhaps reduce fecundity in certain instances. These were purely medical questions which were receiving attention. The dominant cause of the diminished size of families was contraception. The high reproduction rate of the middle of last century was only possible because there was a concomitant high child mortality. When the "safety valve" of that high mortality was taken away too many children lived and it was economically impossible to keep them. A way out had to be found. Therefore contraception came. John Wesley's mother produced nineteen children, and of these thirteen died; that was an excessive cost even to produce John Wesley. The mother of to-day selected her times, and there had grown up a greater value attaching to the individual child life. The women of to-day as mothers had never been beaten. The chief reason why they kept their families down was anxiety in some form. They did not realize that if they starved the country of young lives they were depriving it of producers. Parents had to learn that the completion of the maternal cycle at suitable intervals tended to preserve youth and vigour in the mother as against those who rejected maternity.

Lord Dawson suggested that the first remedy for the social distempers was knowledge which would allay fears about maternity and bring home to people a sense of value. A parenthood instruction service would bring about an altered state of affairs. The State should see that parents otherwise willing to bear their quota of children should not be financially penalized. The family allowance should relate to the children and not to the workers. It should be payable to the mother and have little or no connexion with wages. If it were paid by tokens they should ensure that the money went towards nutrition. It was deplorable to find in how few blocks of tenements was there adequate regard to the bringing up of families. Kensal House in London showed how the difficulties could be met.

Lord STAMP said the differential birth rate was more significant for the future of society than any discovery of science. There was little popular apprehensiveness on the subject and the nation still lived under the social delusion of continuous expansion. It had to be brought home to people that certain trends were absolutely inescapable. A quinquennial census would be of help in this matter. In seven years' time the decrease in the number of boys aged 13–18 would be over 15 per cent. compared with 1938. He asked the Government whether it would set up a Royal Commission to take a comprehensive view of these problems as they arose. He also urged the reinsertion in the census papers of the fertility inquiry of the census of 1911.

The ARCHBISHOP OF YORK said that under the system which the country had adopted it was possible for the man with a considerable family to get a larger income while unemployed. There was an obvious evil in recruiting the population from the unemployed ranks and from those who were content to remain unemployed. He saw no way of modifying that except by the method of family allowances.

GOVERNMENT REPLY: NEED FOR CAUTION

Lord TEMPLEMORE, replying for the Government, said the most comprehensive material which the country possessed at present was at the disposal only of the Registrar-General, and he tended to the view that some of the published forecasts predicted an earlier decline in the population than the facts appeared to justify. During the past six years the realized experience year by year had pointed to a postponement of the date when a decline was possible. The population of the country to-day was materially in excess of the estimates for 1938–9. The birth rate began to rise in 1934, and this rise had continued unbroken for five years. This might suggest that a definite check to the long-continued downward movement had begun, though he did not rely on it completely. In 1933–4 the increase in population was 0.31 per cent.; in 1934–5, 0.43 per cent.; in 1935–6, 0.45 per cent.; and in 1936–7, 0.44 per cent. In 1937–8 there was a small decline. These figures emphasized the need for caution in attempting to forecast the rapidity of a decline in population as a basis for consideration of measures designed to counteract it. It was reasonable to associate the check in the decline of the birth rate with the economic recovery of the country during that period. He did not suggest that a decline in the population was not to be reckoned with after the next fifteen or twenty years, but he thought the matter was more open than was generally believed.

As regards family allowances these had been instituted in other countries as a measure of social justice rather than with the direct object of stimulating the birth rate, and in France and Belgium, where family allowance systems covered the bulk of the populations, there had certainly been no radical variation in the birth rate. The only country with the material increase in birth rate ensuing apparently from statutory political measures was Germany, in which the birth rate rose from 14.7 per 1,000 in 1933 to 18 per 1,000 in 1934. For this change the introduction of marriage loans was held to be partly responsible. In this country neither public nor official opinion had become crystallized on the proposal to pay family allowances. He was informed that it was unlikely that the population of this country would fall below the current total of 46,000,000 for two or three decades. They required far more data before they could reach a basis for Government policy or action. The subject had been debated by the House of Commons on February 10, 1937, and as a result the Population (Statistics) Act was passed and came into operation on July 1, 1938. The object of that Act was to extend the inquiry into the predisposing causes of the decline of the birth rate. The collection of these data would take time, but the material from the first six months' operation of the Act was now being analysed, and a report would be published and would be followed by similar analysis of each year's returns. The provisional information and inferences obtained from the annual records of the next two or three years would be revised and extended when the 1941 census returns became available. When the data were available the Government would be able to see whether the position demanded action, and if so what action would be likely to prove effective. The suggestion for a Royal Commission would be brought to the notice of the Cabinet. He had taken particular note of the suggestion made by Lord Stamp about the five-yearly census.

Medicine Stamp Duties

Consideration of the Finance Bill in Committee was begun by the House of Commons on June 22. On the motion that Clause 7 (Repeal of the Medicine Duties) stand part of the Bill, Mr. GRAHAM WHITE said this country was steadily moving towards the adoption of a nation-wide medical service, but if these duties were abandoned and the sale of remedies was allowed to go on without hindrance as to place, quantity, or description, that would be an attack upon the national health service. The *Times* of June 8 published a statement by the chairman of one of the largest proprietary medicine businesses that the proposed abandonment of these duties was one of the most important things that had happened to the great medicine business and opened up an entirely new vista. The vista, he thought, was anything but pleasing. Advertising and expenditure were being directed to making healthy people consume more medicines.

Sir ARNOLD WILSON said he was one of more than 200 members who had put their names on an appeal to the Chancellor of the Exchequer to continue the tax. There was general agreement that the present duties were archaic and should go, but also general agreement that they should be replaced by something better and more effective. The proposal to leave out the clause would give the Government twelve months to reconsider the whole matter. The desire to defer the repeal expressed a conviction that the removal of the Medicine Stamp Duties would, unless other duties were substituted, facilitate expansion of the trade which urgently needed control and restriction. Sir John Simon had given three reasons why alternative duties proposed by the recent Select Committee were unacceptable: that genuine medicines of real healing value would be taxed; that there would be difficulties in administration; and that he had received many objections to the proposals of the Select Committee. A month later the Chancellor had said the Treasury was challenged about the operation of the duties, and he was advised that it would be impossible to say they were being worked lawfully as a practical scheme. Under the Chancellor's proposal the United Kingdom would be the only country in Europe, and almost the only country in the world except the United States of America—certainly the only part of H.M. Dominions—in which proprietary medicines were not taxed. The Chief Medical Officer of the Ministry of Health almost invited in his annual reports for 1934 and 1935 the taxation of medicines—even those prescribed by doctors. Sir Arnold's nurse had put it succinctly:

> "Remember, child, that doctors think
> More men have died from drugs than drink."

Sir John Simon had spoken of difficulties of administering both the existing taxes and those proposed by the Select Committee. The Treasury had in the last two and a half years made no attempt to devise an alternative scheme. There had been no consultations with representative interests. The National Pharmaceutical Union and the Pharmaceutical Society of Great Britain had not been consulted. There was no responsible body in the drug trade which would not prefer a revised tax to repeal. Sir John Simon finally said that the present duties were being worked unlawfully and had been challenged. The firm which had thrown down that challenge was Messrs. Woolworths, which abandoned its action against the Crown when the Select Committee was set up. The Law Officers of the Crown felt that if the claim went to a jury a verdict might be given against the Crown. There was potential danger when a great monopolistic organization might on a legal technicality put a pistol to the head of the Chancellor of the Exchequer. When the managing director of Messrs. Woolworths appeared before the Select Committee he said he wanted to sell more drugs, and could sell greater quantities in 2d. and 3d. packets than in 6d. packets, but that the stamp duty prevented him from selling these smaller quantities.

CONTROL BY TAXATION

In the broadest sense there were two reasons why proprietary medicaments should be taxed. They were a suitable subject which would bring in from £3,000,000 to £5,000,000, or more if cosmetics were taxed. The other reason was that taxation would facilitate control. Sir John Simon had said that was a matter for Dr. Elliot, whose business it was to bring in a Bill. Sir John Simon had quoted Dr. Elliot as saying that he did not think repeal of the Medicine Stamp Duty could adversely affect the nation's health. Dr. Elliot's loyalty to the Chancellor had led him to a view inconsistent with anything his own Department had said, and contrary to the opinion of every medical man. It was not the view of Lord Dawson or of Lord Horder; it was not the view of the Chief Medical Officer of the Ministry of Health, or of the British Medical Association. Taxation would limit the sale of drugs, to some extent, to pharmaceutical chemists by

cutting out the 3d. pack, whereas removal of the tax would create a fresh vested interest which would have an adverse effect upon national health. Pharmaceutical chemists were as necessary as doctors, and were an integral part of the national health insurance service. They ought to be protected from competition from grocers, cheapjack stores, and hawkers.

Repeal of the tax would discourage the publication of formulae. The Chief Medical Officer of the Ministry of Health said in his report for 1937 that it was essential there should be genuine and full disclosure of formulae. Most M.P.s had lost hope that the Ministry of Health would promote a Bill dealing with proprietary medicines. At least ten attempts had been made since 1920 by private members to get a Bill on that subject through Parliament; all had failed. Now the Postmaster-General had taken a hand, and in the 5s. books of stamps drugs were advertised which had specifically been banned by name by the whole press of Fleet Street as being too fraudulent for any newspaper.

EXPLOITING FEAR

Dr. HADEN GUEST said repeal of this tax was an attack upon the health of the people of this country. There had been financial inflations of a disgraceful character in the patent medicine racket. It was these companies which welcomed the action of the Chancellor of the Exchequer with enthusiasm. The work of the patent medicine vendor was based on exploitation of fear and buttressed by prostitution of medical terminology to boost quack remedies. There was a great amount of money in it. Why should the Chancellor repeal this duty without substituting some control upon a trade which eminently ought to have such control? A pharmaceutical organization had declared that after the abolition of the duty any person could supply medicines to the public through any vendor or automatic machine without disclosing the composition of the medicine sold. The abolition of the duty would further depress the status of the pharmaceutical chemist, which was already depressed by the unfair competition of chain-store organization. Sir HENRY MORRIS-JONES said that not only the retail chemists but the drug trade and the medical profession were mystified as to why the State should throw away a revenue of £1,000,000 a year while at the same time jeopardizing the public health.

A GIGANTIC SWINDLE

Dr. EDITH SUMMERSKILL said that if the Chancellor allowed Clause 7 to stand he would aid and abet a gigantic swindle. If the tax were repealed every bogus medicine vendor could flood the market with any preparation he liked without any obligation to put the formula on the box. She had no doubt many members had bought a preparation sold for 5s. a box which guaranteed to cure varicose veins, and diseases of the blood, kidneys, and heart. This preparation contained 0.5 per cent. of sugar of milk and just a trace of calcium phosphate. Sugar of milk was 2s. a pound, and this preparation cost 2½d. to make up. The gullible public, believing their varicose veins would be cured, paid 5s. for it. It had been said that chemists opposed repeal because they gained by the duty. That was a fallacy. Chemists would gain more if the duty was repealed, because they would have 100 more quack preparations which they could sell to the poor over the counter. Chemists opposed the repeal because many of them felt they were prostituting their science to these bogus medicine vendors.

The question of the formulae was important. A few months ago certain preparations containing iodine were on the market, and were being used by young girls for slimming purposes. It was exceedingly dangerous for young girls to use iodine preparations, and there were two or three fatal accidents as a result of overdoses. These preparations were withdrawn. Now Parliament was opening the market again to these harmful drugs. She reminded the Chancellor of "yadil," which was shown to have a bad effect on the health of the people because it contained formalin. Then there were the entirely valueless cough mixtures. A manufacturer knew that if as a result of an overdose of his cough mixture a fatal accident occurred to a child the sale of that preparation would cease forthwith. Therefore there were on the market cough mixture preparations so useless that a baby a year old could swallow the whole bottle without ill effect. In the case of many preparations the standard price was 1s. 3d. The preparation itself and the patent generally cost about 1½d.; distribution cost five-eighths of a penny; show cards about 1d.; the wholesaler got 2d. and the retailer 3d. That left about 5d. or 6d., which was spent in advertising.

Mr. A. V. ALEXANDER said he represented an organization of 8,500,000 people, mainly of the working class, who had wide experience of the sale of patent medicines. Their long experience with ordinary stores which had a licence to sell patent medicines over the counter, and also experience of proper pharmaceutical establishments with qualified assistants in charge, was that the handing over of the medicine with the Government stamp gave it an imprimatur in the eyes of the uninformed. He had given evidence before the Select Committee that the range of duties was unnecessarily high, and that on many remedies which people were entitled to have it was as high as 25 per cent. Yet it was no check on a remedy which was worthless, because if people could continue to put those remedies on sale without giving any formula the duty stamp would lead many people to buy them. The real remedy was not to reimpose the duty but to require that where the formula of a secret remedy was not disclosed to an independent and qualified body that commodity should be banned. Such commodities should be banned whether dispensed by a pharmacist or not. In the preparations of the organization for which he spoke the formula was printed on the bottle. The Minister should set up an independent body and ban any article which did not receive its approval.

GOVERNMENT'S DEFENCE

Sir JOHN SIMON said the medicine stamp duties were one of the curiosities of the Statute Book, were 130 years old, and were imposed at a time when ideas about medicine were very different from what they were to-day. The attempt to maintain them involved ridiculous distinctions. If kidney pills were offered there was no duty, but if they were called backache kidney pills tax had to be paid. The Select Committee recommended that the existing Acts were obsolete and inappropriate to modern requirements. Further, methods had been evolved by which the duty was evaded by reasons not really good but within this ancient legislation. The administration of this tax was challenged, and he was advised that his position was exceedingly doubtful. It was impossible to apply the Acts as they should be applied. He had turned to the Committee's report in the hope of finding in it an alternative. What he found was the view that a duty should be imposed on practically all medicines and remedies except those made up from the prescription of a doctor. He could not think that was right; it was not a good alternative. He did his best to find a tolerable modification and he had failed. The Select Committee took the opinions of a large number of people, including witnesses speaking for the British Medical Association. These witnesses asserted that if one wanted to discourage quack remedies the right way was not by taxation. No recommendation in the Report required a disclosure of the formulae. To some people these formulae might have a controlling effect, but to him they were printed in such small type and such long words were used that he was not much wiser.

Mr. LATHAM, as a member of the Committee, said reference to the question of disclosure of formulae was outside the Committee's terms of reference.

Sir JOHN SIMON said the report of the Committee contemplated the possibility of taxing not only medicines but all kinds of foods which might be sold as medicines. Did the House think he should adopt that alternative? He had not neglected the public health aspect of the matter. The Ministry of Health had said they did not think repeal of medicine stamp duties was calculated to have an adverse effect on the health of the nation, and that the question whether further control should be imposed was a matter which was engaging their attention. He had overwhelming evidence that the amount of revenue which the duty produced was not in proportion to the trouble it caused, and that the duty did not protect the public health at all. It was not right to finish by

saying that these things had better go on indefinitely. At the same time the sense of the House evidently was that it would like to get some new method of treatment combined with the repeal of the duties, and he was willing to take up with any other Department concerned the question of whether it could be done. In the circumstances he was willing to maintain the present duties for another year and to see whether it was possible to examine the question of this or any other tax, and also the public health aspect. Clause 7 was then negatived.

Standards of Fitness and Medical Examination of Militiamen

On June 20 Dr. HADEN GUEST asked the standards of physical fitness demanded for the four classes of militiamen when they were medically examined. Mr. LENNOX-BOYD circulated the following description of the four grades in which men were placed after medical examination: Grade I.—Men who, subject only to such minor disabilities as can be remedied or adequately compensated by artificial means, attain the full normal standard of health and strength, and are capable of enduring physical exertion suitable to their age. Grade II.—Those who, while suffering from disabilities disqualifying them for Grade I, do not suffer from progressive organic disease, have fair hearing and vision, are of moderate muscular development, and are able to undergo a considerable amount of physical exertion not involving severe strain. Grade III.—Those who present such marked physical disabilities or evidence of past disease that they are not fit for the amount of exertion required for Grade II. Grade IV.—Those who suffer from progressive organic disease or are for other reasons permanently incapable of the kind or degree of exertion required for Grade III. These men are unfit for any form of service.

Answering Mr. John Morgan and Mr. Ritson on June 22, Mr. ERNEST BROWN said instructions to the Medical Boards provided that persons with only one eye might be placed in Grade II and marked "(*a*) vision," provided that that eye was free from disease and reached a specified degree of visual acuity. Figures of the militiamen so affected who were rejected or accepted by medical boards were not available. A one-eyed man from Hexthorpe, Doncaster, had been placed in Grade II and marked for vision on June 15. He was arranging for a Sunderland man to have a further opportunity of appearing before the Board, whose report did not bear out the suggestion that he only had the sight of one eye and that the other eye was affected.

Replying to Mr. Lawson on the same day Mr. BROWN said the number of men medically examined for the militia up to June 19 was 49,586. Of these, 41,297, or 83.3 per cent., were placed in Grade I and 4,553, or 9.2 per cent., in Grade II, but of this number more than half were in that grade only on account of defects of vision or feet. The total number of men passed fit for the two grades now being called up for training was, therefore, 45,850, or 92.5 per cent. Of the remainder, 2,443 men, or 4.9 per cent. of the total, were placed in Grade III, which is the grade appropriate to men who would be fit for certain selected occupations in the Forces but are not at present to be called up for the militia. The number unfit for any form of military service and placed in Grade IV was only 1,293, or 2.6 per cent. of the total.

On June 26 Mr. STEPHEN asked the Secretary of State for War if all militiamen who broke down in health during the period of service and were no longer fit for work would be allocated pensions in view of the fact that they had been certified as fit men before being called on to undertake such service. Sir V. WARRENDER replied that a militiaman would be eligible for a disability award if his disability was attributable to service. Although a man might be passed fit on entering the service, he might subsequently acquire a disability, or a latent disability might manifest itself, which had no connexion with his military service.

Mr. STEPHEN asked the Minister to see that the examination was conducted so that latent disabilities would be discovered before the men passed into the Army.

Sir V. WARRENDER: I think that is beyond the wit of the medical profession.

Mr. STEPHEN: If it is beyond the wit of medical men, will the Minister see that compensation is given in every case when the medical man certifies that the man is fit for service if he develops disabilities afterwards?

Sir V. WARRENDER: We endeavour to deal with cases in as kindly a fashion as we can, trying to avoid hardship, but it would be impossible to accept liability for all accidents which might happen to a man during his service.

Mr. SILVERMAN asked whether, if the medical examination could not possibly disclose some latent defect, it was possible for medical evidence at a later date, when the defect developed, to be sure that it was not due to military service.

Sir V. WARRENDER said that there had to be some evidence that the man underwent some exposure or hardship during his military service to which his disability could be traced.

It is announced that militiamen will have the same ration scale and the same cooking and messing arrangements as the Regular Army. The rations will include one ounce of butter and half an ounce of margarine a man per day.

Military Training of Students

In a reply to Sir John Mellor on June 22 Mr. ERNEST BROWN announced that at a meeting held under the auspices of the Ministry of Labour on June 18 between representatives of the Committee of Vice-Chancellors and Head Masters, together with representatives of the Departments concerned, it was unanimously agreed to recommend that boys intending to proceed to the universities were given the double option of postponing or anticipating their liability to undergo military training. He intended to put this agreed conclusion into operation, subject to reviewing the position in twelve months' time in the light of experience, when he proposed again to seek the advice and assistance of the representatives of the universities and the schools. He added that it was further agreed at the conference that anticipation of the liability to undergo training in respect of such boys should not be granted to those under the age of 18 on January 1 of the year in which they wish to take their training. This recommendation would be borne in mind when applications are considered.

Duty on Films Withdrawn

In Committee on the Finance Bill on June 22 the House of Commons approved, after divisions, the clauses which increase the duties on tobacco, sugar, molasses, glucose, and saccharine. On Clause 3 (Duties on photographic plates and film) Sir JOHN SIMON explained that he proposed not to proceed with the excise duty upon cinematograph films and also to withdraw that on photographic films and plates. The House agreed to the requisite amendments in the clause. An amendment proposing to exempt from the Entertainments Duty zoological gardens conducted for profit but being, in the opinion of the Commissioners of Customs and Excise, of substantial scientific and educational value, was refused by the Government and was withdrawn.

The Services

HONORARY SURGEON TO THE VICEROY

Colonel A. C. Munro, I.M.S., has been appointed Honorary Surgeon to the Viceroy and Governor-General of India, vice Colonel W. E. R. Williams, O.B.E., I.M.S.

CONFERMENT OF C.V.O.

As the liner *Empress of Britain*, in which the King and Queen returned from their tour of Canada and the United States of America, was nearing Southampton on June 22 the King conferred the C.V.O. on Surgeon Captain J. A. Maxwell, O.B.E., F.R.C.S.Ed., R.N.

Medical News

A meeting of the Society for the Study of Inebriety will be held at 11, Chandos Street, W., on Tuesday, July 11, at 4 p.m., when Dr. W. Norwood East will open a discussion on "The Problem of Alcohol and Drug Addiction in Relation to Crime."

The ninety-eighth annual meeting of the Royal Medico-Psychological Association will be held at Brighton on Wednesday, Thursday, and Friday, July 12, 13, and 14, under the presidency of Dr. A. Helen Boyle, who will deliver an address entitled "Watchman, What of the Night?" at the Royal Pavilion at 2.30 p.m. on July 12. On July 13, at the Brighton County Borough Mental Hospital, Haywards Heath, discussions will be held as follows: 10.30 a.m., "Early Treatment for Mental and Nervous Disorders: Co-operation between General Medical Practitioner, Clinic, Boarding-out, General, Special, and Mental Hospitals"; 2.30 p.m., symposium on epilepsy. On July 14, at the Royal Pavilion, there will be discussions as follows: 9.45 a.m., "The Physiopathology of Epilepsy"; 2.15 p.m., "The Sociological Aspects of Epilepsy"; 3.15 p.m., "Therapeutics in Epilepsy." The annual dinner of the Association will be held at the Royal Pavilion on July 12, at 7.30 p.m. for 8 p.m.

The twenty-first annual meeting of the Mental Hospitals Association will be held at the Guildhall, in the City of London, on Thursday, July 6, at 11 a.m. Dr. T. C. Graves, chief medical officer, Birmingham Mental Hospitals Committee, will open a discussion on the Matrimonial Causes Act, 1937, in relation to mental hospital practice.

The fifth annual conference of the Ex-Services Welfare Society, of which Major C. E. Thwaites is medical director, will be held at Grosvenor House, Park Lane, W., on Friday, July 7, at 10 a.m. The subject for discussion is the incidence of war neuroses in civilians and in each of the armed Forces, and Professor Edward Mapother will preside.

The eleventh Congress of French-speaking Gynaecologists and Obstetricians will be held at Lausanne on July 22 and 23, when the following subjects will be discussed: physiology and pathology of the mammary gland in pregnancy; interruption of pregnancy in heart diseases; metrorrhagia in puberty; and detection of chronic gonorrhoea in women. Further information can be obtained from the general secretary, M. E. de Meuron, 6, Rue du Lion d'Or, Lausanne.

An international course of malariology will be held at the Institute of Malariology of Rome from July 25 to September 20. The fee is 400 lire. Further information may be obtained from the Istituto di Malariologia, Policlinico Umberto I, Rome.

A committee of former students of the medical school at Cardiff is organizing a London Welsh Medical Dinner, which will be held at Grosvenor House, Park Lane, W., on Saturday, October 14, at 8 p.m. Particulars may be obtained from the honorary secretary, Mr. Alistair L. Gunn, F.R.C.S., 51, Harley Street, W.1.

Botleys Park Colony for Mental Defectives has been built near Chertsey by the Surrey County Council, and when completed will have cost approximately £530,000. It is designed for the proper treatment and training under favourable conditions of patients who may be subject to be dealt with under the Mental Deficiency Acts of 1913 and 1938. The site is 334 acres in extent, and the first section, giving accommodation for 1,200 patients, was opened on June 24 by Lady Henriques.

W. E. St. Lawrence Finny, M.D., M.Ch., J.P., who is a Fellow of the Society of Antiquaries of London, has been elected a vice-president of the British Archaeological Association.

Dr. John Pugh Jones, Dr. Joseph William Morris, and Dr. Gwennie Williams have been placed on the Commission of the Peace for Merionethshire.

EPIDEMIOLOGICAL NOTES

Infectious Diseases for the Week

Compared with the previous week there was a general reduction in the incidence of infectious diseases, with the exception of scarlet fever, in which there was a considerable increase. Notifications of scarlet fever for Northern Ireland, however, were the same. In England and Wales and in London the notifications are well below the median values for the last nine years and are also fewer than those of the corresponding week of last year. The type of the disease has generally remained mild. Despite the intensive immunization campaign against diphtheria in an endeavour to stamp out the disease in South Shields cases continue to crop up. During the week 8 fresh cases were notified and 1 death was reported. So far this year there have been 291 cases and 25 deaths, while during the whole of 1938 there were 589 cases and 62 deaths.

In a small outbreak of diphtheria in the urban district of Wilmslow in the county of Chester 4 were notified during the week under review and 12 in the previous week. The first cases of the disease were notified on Friday evening, June 9, about 5 p.m., and by 10 p.m. eleven cases had been traced. As all these patients, except two in one household, had been taking milk from one supply, the milk supply was stopped by written notice. All medical practitioners in Wilmslow and Alderley Edge were notified by telephone, and it was partly through this that some of the cases were traced. Next morning a house-to-house canvass was made of all customers of the affected dairy. A warning was given as to sore throats and any history of sore throats in the family was obtained, also the name of the family doctor. A meeting of all the general practitioners in the district was then held, and each obtained a list of the customers who were his patients. It was agreed that each practitioner should visit his own patients and offer passive immunization if he thought fit, and that throat swabs should be taken from both adults and children. This work was carried out during Saturday and Sunday, and at the same time ordinary contacts were followed up. The last definite case was notified during the night of Sunday/Monday. Since that time two cases have been removed for observation; it has also been found that the one household stated not to have had milk from the suspected dairy had in fact obtained one small bottle of milk from this source, and that the two cases were the only persons who had drunk this milk. To date there have been 15 confirmed cases and 2 observation cases, with 2 deaths.

Sylvatic Plague in South Africa

The *Weekly Epidemiological Record* of the Health Section of the League of Nations has surveyed the position in South Africa as regards sylvatic plague since the beginning of the century, when the disease was originally introduced. The first outbreaks were confined to seaports and towns near the railway lines, the last occurring at King William's Town near East London in 1907. A localized outbreak at Durban in 1912 was regarded as being accidental, and it was concluded that endemic plague had been eradicated. Two years later the outbreak of pneumonic plague on an isolated farm in Tarkastad district was the beginning of a period when the disease became widely distributed in rural areas and involved natives almost entirely. The disease was usually most prevalent during the summer months, when mortality among domestic rodents tends to be high following an epizootic among gerbilles, *Taterona* and *Desmodillus*. The disease is not transmitted directly from gerbilles to man but by the agency of the multimammate mouse, *Mastomys coucha*. At present plague is endemic in the Union of South Africa and is spreading to adjoining territories. In 1934 the infection crossed the Olifants River, and in 1935 it was first reported in Basutoland and Bechuanaland. In March, 1938, plague was notified at Port Elizabeth, following an outbreak at Korsten, a few miles from the town where the epizootic among domestic rats was proved. The rats at Port Elizabeth itself appeared to be free from the disease.

No. 24

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended June 17, 1939.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for *(a)* England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland. Median values for the last 9 years for (a) and (b).

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for : (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases ; a blank space denotes disease not notifiable or no return available.

Disease	1939					1938 (Corresponding Week)					1930-8 (Median Value Corresponding Weeks)	
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)	(a)	(b)
Cerebrospinal fever	21	1	7	1	—	22	2	12	2	—		
Deaths		—	—				2	2				
Diphtheria	755	70	182	44	9	889	115	167	57	16	877	144
Deaths	17	2	—	2	—	29	3	4	—	—		
Dysentery	21	4	28	2	—	37	14	27		—		
Deaths				—	—				—	—		
Encephalitis lethargica, acute	4	2	1		—	3	—	—		—		
Deaths		1					1					
Enteric (typhoid and paratyphoid) fever	21	4	5	12	2	15	5	1	3	3	28	
Deaths	1	—	—	—	—	—	—	—	—	—		
Erysipelas		39	53	5	2			58	6	2		
Deaths		2					—					
Infective enteritis or diarrhoea under 2 years												
Deaths	30	1	10	4	4	48	20	16	7	1		
Measles		34	135		3			258		7*		
Deaths	2	—	—	1	—	14	5	4	1	1		
Ophthalmia neonatorum	95	7	37		2	106	3	31		—		
Deaths												
Pneumonia, influenzal†	635	55	3		17	787	49	2	1	18	791	49
Deaths (from influenza)	14	1	3	—	1	21	2	1	1	1		
Pneumonia, primary			157	17				205	17			
Deaths		5		7	5		12		8	11		
Polio-encephalitis, acute	1	—				—	—					
Deaths		—					—					
Poliomyelitis, acute	15	4	1		—	—	—	1		—		
Deaths		—					—					
Puerperal fever	2	2	10		—	2‡	2	11	2	2		
Deaths		1					—					
Puerperal pyrexia	183	14	27		1	174	16	19		2		
Deaths												
Relapsing fever	—	—			—	—	—			—		
Deaths												
Scarlet fever	1,549	161	240	60	79	1,746	156	383	76	77	1,676	238
Deaths	—	—	—	—	—	5	—	—	—	2		
Small-pox	—	—	—		—	—	—	—		—		
Deaths	—	—		—	—	—	—		—	—		
Typhus fever	—	—	—	—	—	—	—	—	—	—		
Deaths				—	—				—	—		
Whooping-cough		324	180		18			119		34		
Deaths	14	3	4	3	1	15	3	1	1	1		
Deaths (0-1 year)	264	37	60	20	25	310	59	80	24	15		
Infant mortality rate (per 1,000 live births)	41	33				51	48					
Deaths (excluding stillbirths)	3,939	661	551	178	137	4,172	736	560	181	134		
Annual death rate (per 1,000 persons living)	9.7	8.5	11.2	12.0	12.0	10.3	9.4	11.4	12.2	11.9		
Live births	6,754	1,082	956	439	252	7,685	1,393	974	393	246		
Annual rate per 1,000 persons living	16.6	13.9	19.4	29.5	22.1	18.9	17.7	19.8	26.5	21.8		
Stillbirths	218	26	37			297	55					
Rate per 1,000 total births (including stillborn)	32	23	37			37	38					

* 1 case in Belfast.

† Includes primary form in figures for England and Wales, London (administrative county), and Northern Ireland.

‡ Puerperal fever was made notifiable only in the administrative county of London after October 1, 1937.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, W.C.1.

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QUERIES AND ANSWERS

Excessive Smoking

"R. R." writes: I have a patient who is an excessive smoker. He has developed a duodenal ulcer and is anxious to give up smoking. He has done this but finds it a very great effort, after meals in particular, to stand the craving for a smoke. Can anyone suggest any line of treatment which will lessen the craving?

Mastitis in an Elderly Man

Dr. BEAUMONT H. COMERFORD writes in answer to "G. A. T." (June 24, p. 1316): I have found that the soaping, in the bath, of the male nipple, also of the female, is a common cause of mastitis.

Sterilization of Syringes

Dr. A. G. BADENOCH (Dumbartonshire) writes: I carry my hypodermic syringe, with the needle fitted, in a metal spirit-tight container, in 70 per cent. alcohol, ready for use. I boil up the needle often and the syringe less often, but after a septic case, or when only a short interval elapses between injections, I am always careful to boil. That is to say, I trust to the alcohol, but not absolute or absolutely. Always before giving an injection, unless in dire emergency, I scald out a tea-cup with boiling water, refill it with boiling water, and with this wash out my syringe and needle before and after the injection. It is impossible to get a moderately clean saucepan in some of the houses I visit, but tea-cups can be cleaned and boiled water from a kettle is usually sterile. But what about the hypodermic tablet? I assume it to be sterile as it lies in the tube. I grasp the barrel of the cleansed syringe (with the needle in place) between the first and second fingers of the left hand, palm and plunger-knob uppermost, bring the right hand naturally over the left and grasp the plunger-knob between the same two fingers of the right hand, and withdraw the plunger. Palms facing inwards, piston and needle are now facing outwards, out of harm's way. I pick up the tube of tablets between the thumb and index finger of my right hand—the plunger hand—and withdraw the tiny cork with the thumb and index finger of the left hand (the little plug of cotton-wool has been discarded long ago). One tablet is now gently tipped into the upright barrel of the syringe, the right hand, you will notice, performing this feat. The little cork is replaced, the tube is laid down, and the piston is returned to the syringe barrel. A slight rotary motion crushes the tablet and prepares it to be dissolved by the still hot water which is now drawn in from the scalded tea-cup. I am willing to improve my technique. Will someone suggest an antiseptic miscible with water and alcohol that can be added to the spirit in my container, and so eliminate a risk that, I submit, my present method greatly minimizes?

Income Tax

Telephone—Schedule E Assessment

"J. W." acts as M.O.H. for two authorities, who each bear one-third of his telephone expenses. Can he claim anything for the cost of the maid who has to attend the telephone when he and his wife are out of the house?

*** The proportion of the maid's time spent in that way would presumably be so small that the claim would hardly be worth making. Further, the Income Tax Commissioners might not regard her attendance to the telephone as "necessary," or in so far as it applies as covered by the two-thirds of the telephone account borne by the authorities.

Assistant—Basis of Assessment

"M.B." took up his present post in November, 1937, as an outdoor assistant at £400 (plus car allowance), rising to £450 at November, 1938. On what basis should he be assessed?

*** If he held a similar appointment up to November, 1937, or thereabouts, he can claim the previous year's basis. Otherwise he is chargeable for the two years to April 5, 1938 and 1939, on the amount of his salary for those years, less, of course, the usual personal allowances. For 1939–40 he will be chargeable on the amount of his salary for 1938–9.

LETTERS, NOTES, ETC.

First Aid

A useful booklet entitled *Schedule of Six Lectures on First Aid* has recently been published under the auspices of the Cheshire County Council. This is intended to be read in conjunction with the *St. John Ambulance Association First-aid Book*, and deals with such things as fractures, wounds, haemorrhage, artificial respiration, head injuries, shock, war gases, and burns. The booklet can be obtained from the *Macclesfield Times*, Macclesfield, Cheshire, for 7d. post free.

Anatomical Outline Drawings

"Quick Aid" Anatomical Charts, for A.R.P. and Other First-aid Students, by Dr. G. Douglas Drever, is a series of five outline drawings, designed to give a clear mental picture of the form and general position of the principal bones of the skeleton and of the course of the main arteries of the body. In the fourth plate indications are given of the position in which digital compression of the arteries or a tourniquet may be applied in cases of haemorrhage, and in the fifth plate the site and nature of some of the more common fractures of bone are depicted. The illustrations may be found useful by beginners as a supplementary aid to the study of the more detailed descriptions which are found in the standard works on first aid, and in graphically fixing attention on the names of certain principal parts of the body and types of fracture. The charts are supplied in an envelope by H. K. Lewis and Co., Ltd., 136, Gower Street, W.C.1 (price 1s.).

Medical Golf

The summer meeting of the Scottish Medical Golfing Society was held at Princes Golf Club, Sandwich, on June 17 and 18, when the results of the competitions were as follows: Bogey Competition (singles): 1, Dr. W. S. Maclay (9) all square; 2, Dr. John Grant (5) 1 down. Foursomes: 1, Dr. John Grant (4) and Professor McDowall (6) 1 down; 2, Dr. Benson Young (5) and Dr. Bruce Williamson (10) 3 down. Medal Round: 1, Dr. Donald Paterson (17) = 75; 2, Dr. Benson Young (5) = 80. Fourball: 1, Dr. Gilchrist (6) and Dr. Bartleman (9) 8 up; Dr. T. A. Crawford (9) and Dr. W. S. Maclay (8) 4 up. The Silver Haggis awarded for the best eclectic score taken from the bogey and medal rounds was won by Dr. W. S. Maclay. The Captain's Prize, presented by Dr. E. F. S. Gordon for a bogey competition on the medal round, was won by Dr. Donald Paterson.

Disclaimer

Mr. ROWLAND P. OSBORNE (Park Hospital, Manchester) writes: I should like it to be known through your columns that I am in no way responsible, nor do I know who is responsible, for the unwelcome publicity afforded me in connexion with an operation performed at this hospital.